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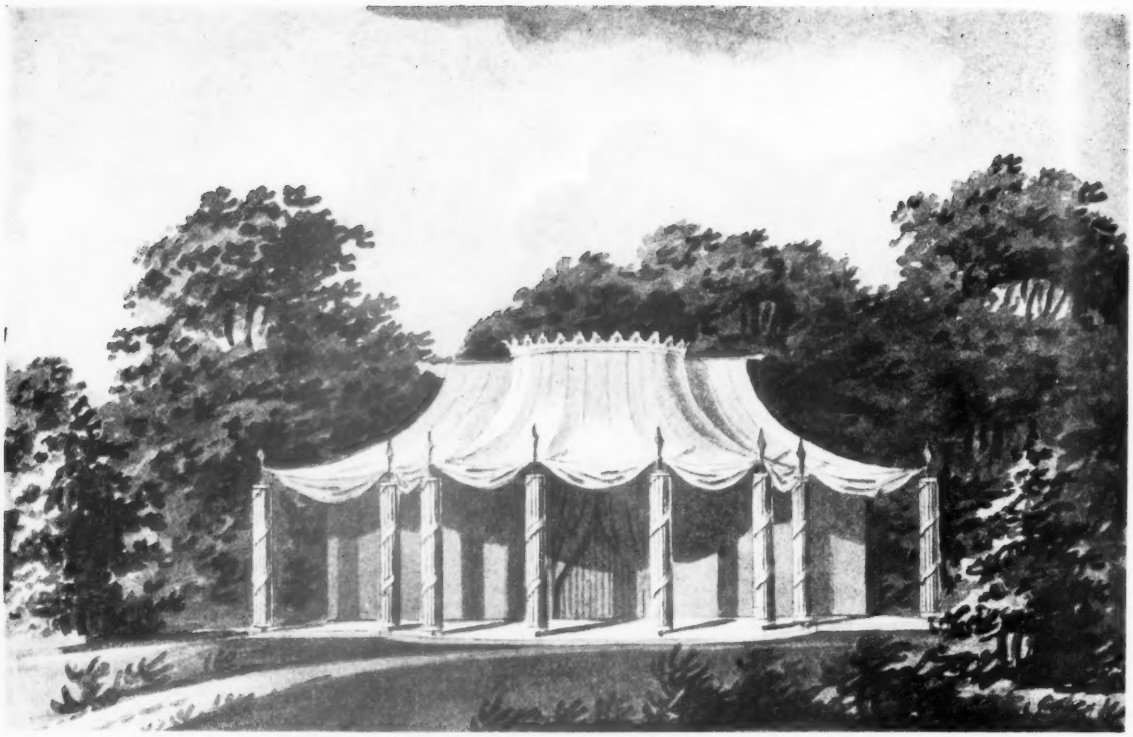


Design for a Pavilion, by Humphry Repton (1752-1818)
From the portfolio of Repton drawings presented to the R.I.B.A. Library by Mr. J. Summerson

JOURNAL OF THE
ROYAL INSTITUTE *of* BRITISH ARCHITECTS

VOL. 40. 3RD SERIES 25 FEBRUARY 1933 No. 8

Journal

The Royal Institute has received notification that His Majesty has approved of the award of the Royal Gold Medal to Sir Charles Reed Peers, C.B.E., M.A. [*F.*] President of the Society of Antiquaries and Chief Inspector of Ancient Monuments and Historic Buildings. The Medal will be presented to Sir Charles at the General Meeting on Monday 3 April at 9 p.m.

It is announced in the *London Gazette* that the King has been pleased to appoint Mr. Charles Holden, F.R.I.B.A., to be a member of the Royal Fine Art Commission, in the room of Sir Reginald Blomfield, R.A., who has resigned.

Mr. W. Curtis Green, F.R.I.B.A., has been elected a Royal Academician.

On Wednesday, 8 March, at 6 p.m., Mr. H. S. Goodhart Rendel will open a series of six one-hour lectures for the general public at the R.I.B.A. on How to Look at London. Mr. Goodhart Rendel's lecture has the title "Piccadilly," the subsequent lectures will deal with a variety of types of buildings and the series will close with a lecture by Mr. A. B. Knapp-Fisher on What London Might Be. The lectures are not meant for architects but for the lay public, so this notice is not intended to bring the architectural profession in London crowding to the R.I.B.A. but rather to encourage members of the Institute to tell their lay friends about the lectures. Undoubtedly one of the most important functions of the Institute is to help in the architectural education of laymen. The course is a serious endeavour which we hope will receive the response it deserves. Tickets are not necessary for admission but cards have been printed giving full information about the lectures and any member who thinks he could dispose of any can obtain them from the R.I.B.A. We have also had posters and leaflets printed which we can send to any members who are able to display them in prominent places.

The lectures start at 6 p.m. and their titles and dates are as follows :

March	8	Piccadilly Mr. H. S. Goodhart Rendel [*F.*]
March	15	Where Londoners Live Mr. A. S. G. Butler [*F.*]
March	22	Where Londoners Work Mr. T. A. Darcy Braddell [*F.*]
March	29	Where Londoners Play Mr. F. E. Towndrow [*A.*]
April	5	Where Londoners Shop Mr. P. Morton Shand
April	12	What London Might Be Mr. A. B. Knapp-Fisher [*F.*]

Members of the architectural profession all over the world will have seen with great regret the announcement of Professor C. H. Reilly's pending retirement through ill-health from the Roscoe Chair of Architecture at Liverpool University, where as Professor he has been in charge of the University school of architecture for nearly thirty years, raising it from comparative obscurity to international fame. The continual success of his students in the R.I.B.A. prize and studentship competitions, and particularly in the Rome scholarship, is an annually recurring testimony to his skill as a teacher and to the staff he has collected round him, and to the excellence of the system of architectural education he has evolved, the influence of which may be seen in many buildings by Liverpool students all over the world.

We hope that every member who can do so will support the dance which has been organised by the Social Committee for the night of 6 March. It will last from 9 p.m. until 1 a.m. The price of the tickets, which is six shillings each, will include light refreshments, and there will also be a bar where members can obtain alcoholic drinks. Tickets can be obtained by or through members of the R.I.B.A., either at the Institute Office or by writing to the Secretary of the Social Committee. The dance has specially been arranged to take place soon after the

annual dinner at Claridge's Hotel, particularly so that those members of the Institute coming up to London from the country can combine the two festivities in one visit.

In his speech after Mr. Thomas Wallis's paper on Monday night Professor Reilly made a remark which we cannot let pass without a challenge. He spoke of the meeting as being "one of the rather rare occasions when the Institute deals with modern architecture." The R.I.B.A. would indeed be in a sad state if recognition of the claims of modern problems for exposition and discussion was only rarely made, but happily the true story is not so very bad. Of the last thirty-eight papers read in the R.I.B.A. during the last four years no less than twenty-eight have been on "modern" subjects and only the remaining ten on purely historical subjects. We have, for instance, in the last two years alone, had papers on Modern Bridges, Modern Cinemas, Modern Flats, Modern Street Architecture, Modern Office Buildings, on Modern European Architecture and on Aerodromes —the last a subject so modern that it would be redundant to give it that descriptive prefix; not to mention all the other papers on current problems, such as the repair of ancient buildings and the public control of building.

As was promised in the JOURNAL a few months ago, we are preparing bibliographies to help members of the R.I.B.A. entering for competitions; accordingly a list has been made of all the most useful literature on hospitals and of all the best recent hospital buildings for the use of persons entering for the Surbiton Competition, and similar lists will soon be ready on Exhibition Halls for those competing in the Manchester Building Trades' Exhibition competition. These can be obtained free by writing to the librarian at the R.I.B.A.

An Exhibition of Architects' Working Drawings will be held in the R.I.B.A. Galleries from Wednesday, 8 March, to Friday, 17 March, during which time it will be open daily from 10 a.m. to 8 p.m. The Exhibition, which is particularly intended for students, is to illustrate the type and quantity of drawings necessary in the production of a good building and to illustrate the technique of good architectural draughtsmanship. On Tuesday, 14 March, at 8 p.m., there is to be an open evening for students, when the architects who have lent drawings (or their representatives) will be present to explain the drawings. Refreshments will be provided and no cards of admission are required.

The following architects are lending drawings: Mr. Joseph Emberton [*F.*] (Royal Corinthian Yacht Club, Burnham-on-Crouch), Mr. C. H. Holden [*F.*] (Sutton Valence School Chapel; Arnos Grove Station, Piccadilly Railway; Metropolitan District Railway Offices, Acton), Messrs. Ivor Jones and Percy Thomas [*A.F.*] (Swansea Civic Centre; a Small Public House), Messrs. Richardson and Gill [*F.F.*] (St. Margaret's House, Wells Street, W.1).

In this JOURNAL we print an interesting account of a number of drawings by Humphry Repton and his sons, John Adey and George Stanley, which Mr. John Summerson, the author of the article, discovered by chance in a London printseller's "job-lot" collection, and which he has presented to the R.I.B.A. library where they may now be seen. Humphry Repton is well known, particularly for his published works and for the "improvements" he effected in the entourage of many English country houses. In his own day he received such fame that he became a character for reference and lampoon in the works of the leading novelists of the early nineteenth century. His two architect sons, however, have received very little attention, though, as will be seen from the drawings we reproduce, their work had a real charm and is genuinely representative of that unemotional period of English architecture which, although quiet at times to the point of dullness, had a charm which we are to-day learning to appreciate at its proper value.

The architecture of the Reptons is classic architecture domesticated, the leonine qualities of the English High Renaissance have been tamed to the soft English scene, which Humphry was at pains to soften even more with his wandering paths and subtly placed tree-clumps and pseudo natural lakes. The bold, emphatic architecture of symmetry was not Humphry Repton's art, but rather his was the skill which conceals the mechanism of design behind carefully moulded natural form. In the Langley Park Red Book, to which Mr. Summerson refers, there are several pages of neatly written and persuasive argument against the "tedious sameness" and the many other faults of avenues—likewise all the generally accepted intrusions of symmetry and classical principles into nature were subjects for Humphry Repton's reforming zeal until Nature herself could hardly keep pace with him and be as natural as Humphry wished.

The addition of these drawings to the R.I.B.A. collection is a valuable enrichment of our library. The carelessness of the later nineteenth century for the architecture of the immediately preceding age meant that many interesting and valuable records were swept into the waste-paper basket, so there is reason for satisfaction when a portfolio as full of interest as this is recovered and placed where its contents can be studied and preserved.

COTY'S FACTORY ON THE GREAT WEST ROAD

FACTORIES

BY THOMAS WALLIS, F.R.I.B.A.

A PAPER READ BEFORE THE ROYAL INSTITUTE OF BRITISH ARCHITECTS ON MONDAY, 20 FEBRUARY 1933

THE PRESIDENT, SIR RAYMOND UNWIN, IN THE CHAIR

INTRODUCTORY

WHEN your Council invited me to give members of the Royal Institute my views on the planning and construction of industrial buildings, I accepted with pleasure, firstly, because it is a subject very dear to me, and one to which I have given many years of study, and, secondly, since through the great activity that there has been in the construction of this class of building during recent years, it has attracted the keen attention of so many of our members.

The present age is one of progress—progress in almost every sphere of activity to which man has lent his skill and study, and in this rapid march towards new and better ideas the architectural profession must be among the leaders.

Industrialists all the world over have never, throughout the world's history, been faced with such serious problems to solve, whilst the competitive race has never been keener.

In view of these strenuous times the prudent man has seen that in order to retain his position his organisation must be flawless.

The country's recovery from the Great War was, to a large extent, dependent upon the ability of our industrialists to compete favourably in the world's market. To ensure this they were ready to throw aside old methods and abandon old plant, and in its place to install the most up-to-date plant at almost any cost. Having decided on this it was realised that the fabric to house the plant was also one of the main essentials for economical production. The necessity for a complete reconstruction spread far and wide, with the result that practically a new branch of architecture sprang up which, as before stated, has necessitated the concentrated attention of many of you, and I therefore make no apology for claiming that industrial architecture is one of the most important and certainly at the present time one of the most active branches of our profession.

There is no doubt that we must credit America with the first conceptions of the new style of industrial building, with Germany a close runner-up. The reason for this was undoubtedly American methods of mass production, which quickly demanded the essentials of correct planning on the direct route principle, giving proper sequence of operations. Their methods were soon followed in the British Isles, and I feel that whilst we can still learn from America, they also, if they care to, can now learn from us, not only in methods of production, but also in the many details of factory design.

The industrial client is a man who knows what he wants ; he is a person of first-class business qualifications and is after quick action. Generally speaking he does his part well and expects you to do your part equally well. Naturally one of his first questions is cost, and it is for you to study this question in the utmost detail, to give a figure which is enough, but not more than enough, and to see that your figures are kept to the finish. From my experience of industrial clients in the past the architect has not a good reputation on the question of his estimates.

The American client on first arrival in this country is a difficult man to handle. He has come from a place where they are supposed to complete a building almost between dusk and dawn, if all we hear is correct. He soon, however, gets the atmosphere of this country and knows what is best possible.

The factory architect to succeed must play his part in every detail of building and engineering work from the digging of the first sod to the raising of steam in the building, including knowledge of many engineering details, both in services and plant installation. He really should study the many details of production of the article that is to be made in the building if his own work is going to be fool-proof. He has to show that he is not a luxury man but an essential man, and he has to work hand-in-glove with the works manager who is going to run the plant. Only by such methods shall we architects retain our position and the confidence of the employer, as lesser services and services of an inferior nature can readily be carried out by a designing contractor, who poses as the man who charges nothing for his designing but generally charges double, or even by the works engineer himself who is so often expected by his employers to be able to tackle all the difficulties of factory construction.

THE OLD FACTORY AND THE NEW ARCHITECTURE

The principal manufactures of the world were bred and born in this country, consequently nearly all the best manufactured goods at one time came from England. Most of these industries started in a very small way, and were nearly all producing hand-made goods, for which the workers received very low pay. The buildings to house them were not designed for the purpose, any old shed enclosed with brick walls, badly lighted and ventilated, seemed to suffice. Lavatories were inadequately provided, and in a very temporary and insanitary way.

I am sorry to say that there are quite a number of these buildings still in existence in some parts of this country, and although they have had lavatories added to them to conform with the Acts they are still more like pig-styes than buildings where human beings have to work. I can quite understand how such surroundings must create a sordid mind, breed sedition and contempt for society in the mind of the workers. These poor creatures under such circumstances have not much to help them to be good citizens. We hear so much of what good housing has done for the worker, but good places to work in are, in my opinion, even more necessary, as, apart from sleep, the greatest part of life is spent in the factory, and it is up to the architect to cultivate ideals in the minds of the leaders of industry.

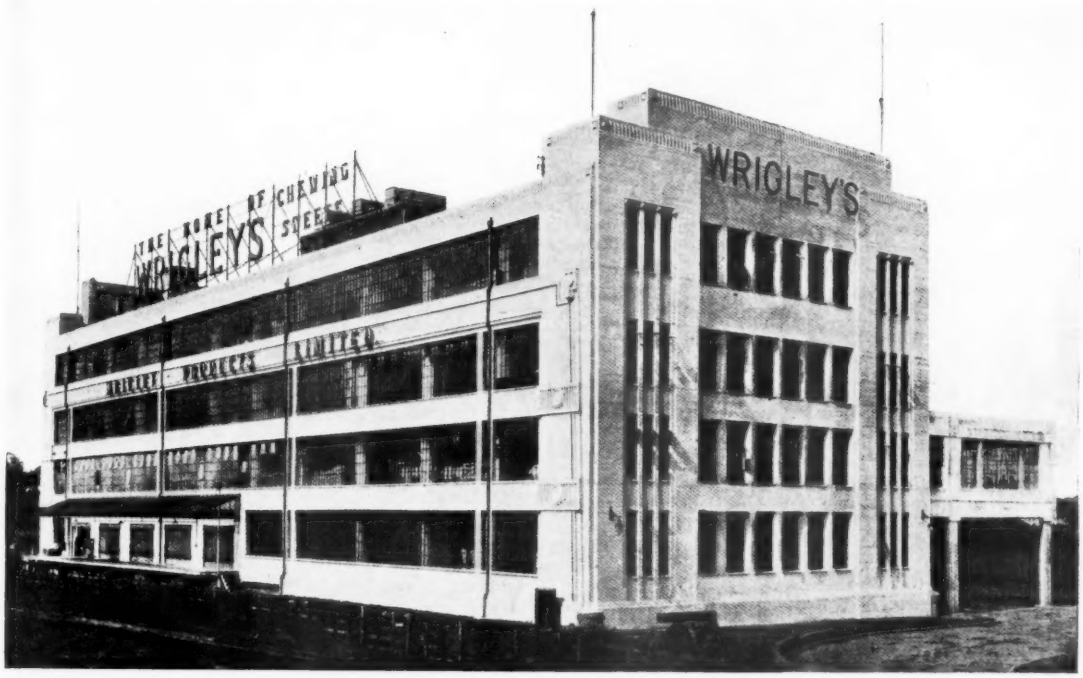
When talking on architecture it is the usual custom to refer to historical structures, but, unfortunately, with industrial architecture there are none existing worth mentioning. Industrial architecture has a clear unfettered birth free from tradition, and I lay claim that it is the pioneer of the new style which I will name "Transgressional," since it may be considered to violate the accepted canons of design. Whilst the influence of this new style is easily detected in nearly all new buildings, there is still that tendency to copy the great man who was born about 2,000 years ago, and who at that time so cleverly turned rough stone and other materials into beautiful, graceful and dignified buildings, whose name was Architecture—and after whom all buildings of any pretension have been called ever since. Although millions of buildings have since been erected there are none that equal these early structures in originality and beauty.

For years these buildings of the ancients provided the material on which all architects based their works, using the elements of classic architecture as if they were a child's "box of bricks," to provide the means of solving every problem. This use of ancient architecture was, until quite recently, propagated by the architectural schools in all parts of the world, and we can see the results in any street or square to-day.

I am certain the time has come entirely to disregard the " box of bricks" for it does not provide the designs which modern requirements demand.

Many good buildings, especially in London, have been destroyed and replaced with something similar, but in most cases not as good architecturally. Why, for goodness sake, do we not design buildings that will be, in the future, known as George V period, and really "Transgressional," fulfilling only what the requirements demand, and what the eyes want to see—good shape, proportion and the necessary cunning introduced for some purpose just where its value is most desired.

Probably the greatest reason for copy is that desire to harmonise surrounding, but if this is so we shall never make progress—on the contrary it will hamper our imagi-



MESSRS. WRIGLEY'S FACTORY, WEMBLEY

nation and stop progress. A good new modern designed building will harmonise if you give it time to age. Are not some of the most beautiful and picturesque squares and streets in our city made up of buildings of different periods close against each other—all styles mixed up, good, bad and indifferent—yet how delightfully pleasing and interesting they are. If they were now all pulled down and together rebuilt exactly as the original design how perfectly horrid they would appear. Yes, age tones them down and makes them become friends and their history enriches their interest.

ECONOMY IN FACTORY DESIGN

To deal now with the various forms of factory design and construction, I want to say a few words on the question of economy. It has to be appreciated that the capital cost of plant installation and buildings is a burden upon which dividends have to be paid, and therefore true economy must be foremost in one's mind from beginning to end. By this I mean that a penny-piece must not be wasted; I do not mean that a penny must not be spent, providing it is wisely spent and is going to bear its part and use in the making of profits.

The word "economy" has been and is now being abused. The advice from many high quarters with regard to economy is painfully within the very near memories of all of us, but the effective result of the steps which were taken is still to be realised—I hope it will, but I have my doubts. I have still to learn that the partial stoppage of the machine which keeps the empire alive is the only means towards the settlement of the nation's troubles. Our own profession, as well as the building trade, has suffered severely from these so-called economies, but I trust that the future, although obscure, has something in store for us.

THE TARIFF ACTS AS A STIMULUS

In spite of the stoppage of so much municipal and private work it is encouraging to think that new building of an industrial nature has expanded rather than contracted, an expansion which is largely due to one important factor—the passing of the Tariff Acts which has brought so many American and continental industrialists down to the necessity of manufacturing their goods in this country. Work under this heading started under the Protection of Industries Act and has greatly developed under the main Tariff Acts. Without wishing to enter into political contentions or other matters rela-

ting thereto, this is surely bound to have its effect in this country.

THE MAIN TYPES OF INDUSTRIAL BUILDINGS

To get down now to the main question of industrial building design and construction, these buildings may be roughly classified under three headings, as follows:

The one-storey building
The multi-storey building, and
A combination of the two.

Generally it is found that the larger factory has to be constructed on the last of these three classes for varying reasons. It may be that there are heavy components to be dealt with which can only economically go on the ground floor. For foundries, forge shops and heat treating plant, the one-storey building is also employed, but where an article can be more readily moved about in its process by means of conveyors or gravity chutes it is found that a multi-storey building is advantageous. Take, for example, the manufacture of artificial silk or even paper—the raw material is conveyed or even pumped to the top of a high building from whence it gravitates or chutes from floor to floor until the manufactured raw material is available on the ground floor, where it passes through a one-storey building for its actual manufacture into the finished article, at the end of which it is often found profitable to enter it into the finished goods store in the form of a multi-storey building. Even when land is cheap this form of building is advisable for many articles of manufacture, although there are many others, as before stated, that can only be dealt with on a level plane. Factories for the manufacture of motor tyres, motor bodies, etc., are far better dealt with on one floor as the gravity system is barely practicable, but in practice every form of manufacture has to be dealt with on its merits. Our buildings for the Michelin, Firestone and the Avon Tyre companies are dealt with on these lines, as well as the body and wheel works at Dagenham, but in this latter case, owing to the heavy nature of the plant, lofty one-storey buildings fitted as crane bays were used for the actual pressing, simply because of the height of the presses, the actual manufacture of the bodies taking place in low single-storey buildings.

THE SINGLE-STOREY FACTORY

In designing single-storey buildings you will find that, as far as possible, works managers like full open areas of floor space without obstruction, and in order to meet this we have found it advantageous to elevate such things as lavatories, cloak rooms and works offices to occupy space in the roof. This form of accommodation is also economical.

Roofing

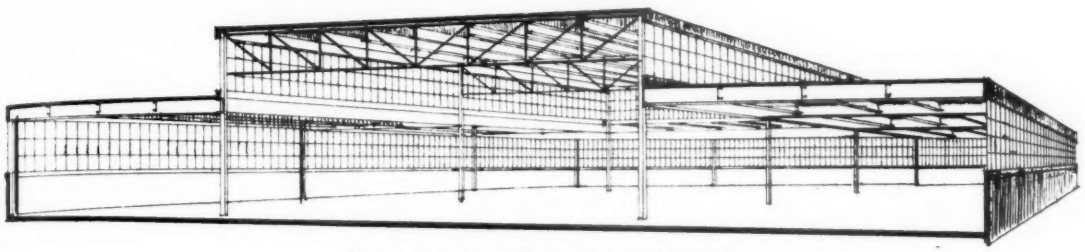
To deal now with the various types of one-storey buildings, the generally accepted practice in Europe is to use the north-light type with a clear height of anything from 12 feet to 15 feet, and if this roof is to be used with economy one should be careful to look after the proportion of glazing to floor space. The minimum of glass and the maximum reflection from the underside of the south slope should be adopted, as this method reduces and conserves heat. I have seen many factories of this type with an over proportion of glass and less effective lighting, simply through bad design. This form of roofing has its disadvantages, and unless a considerable amount of money is spent on its construction it is not wind- or dust-proof and it does not lend itself to proper ventilation in all weathers. In America they consider this type of roof obsolete and they have adopted other types of construction, such as the butterfly truss, as they claim that this is better ventilation and even better lighting. They have carried out tests and are said to have proved that when the intensity of light varies and when the direction which the light enters the building also alters, east and west lighting is better for the eyes of the operatives than north lighting. If the rays of the sun are a disadvantage they can, of course, be diffused by the use of prismatic or ribbed glass. I am myself convinced that there are many advantages to be obtained by the admission of the rays of the sun into the building.

I have not used this type of truss in this country, but have adopted a simpler form of roofing for east and west lighting, and it has proved to be very satisfactory under working conditions and is definitely dust- and wind-resisting and gives better ventilation. This type of roofing can be seen in the Packard and Coty factories in the Great West Road, but its use is limited to a width in the building of about 140 feet. If it is essential that the roof has to be entirely weatherproof, this type of construction is definitely cheaper than a north light truss, whilst the cleaning of the roof is simpler and the internal appearance infinitely better.

To return to the north light truss, where large open areas free from columns are necessary, it is easier to adopt this type of construction than any other, as spans up to 200 feet are economically possible. Lateral supports are obtained by a deep truss running from the apex to the tie beam, the only disadvantage being that this somewhat affects the reflection of the north light, but to overcome this it is quite possible to have this main truss on an angle and enclosed in the south slope. I have not tried this form of construction, but it can be seen in Germany where large open areas are contrived without any visible means of support.

Floors

The one-storey building readily lends itself to departmental extension, and, providing spare land is sufficient, the work can be carried out without interference to the progress of the manufacture. External walls should be weatherproof but of light construction, so as to make them readily removable, and all roofs should be constructed for easy extension. It is a long subject to deal with the various types of floor, as each manufacture has to be



ISOMETRIC, SHOWING EAST AND WEST LIGHTING

dealt with on its merits. The commonest form of finish, viz., granolithic, has many disadvantages. Unless properly laid to latest methods and if put to heavy use, its life is under twelve months. These floors can be constructed so that they will not hollow and will not wear; wearing generally is the result of hollowness. Where the wear is extraordinarily heavy even the latest methods of granolithic laying will not stand, and the only satisfactory form of floor for this purpose is the ordinary type of steel plates firmly bedded into concrete. It is a fallacy for works managers to maintain that granolithic floors are cold for the worker who is seated at his task. It only has the appearance of being cold, and as soon as the worker is persuaded that it is not cold he will readily agree.

Where the floor area is to be occupied by a large number of small machines then granolithic is unsuitable and some form of wood block of planked floor should be adopted, where plant can be readily screwed down, always providing that, if wood blocks are used, the plant movement is insufficient to move the blocks.

To deal now with one other form only of floor construction—that which has to stand up against the effects of various types of acids or other material injurious to cement. Should the acid be of very great strength and it is necessary for heavy loads to stand upon or to be moved over the floors, I know of nothing that will stand up to the job other than blue bricks pointed up with sulphur. Where the power of the acids are of weaker strength there are many forms of acid-resisting asphalte which can be used and where temperatures are high or loads somewhat heavy, this asphalte can be strengthened up by the incorporation of granite chippings. One further word on acids—be careful with all your metal work in a building where fumes are prevalent. If the strength of the fumes is great wooden sashes are often necessary, and in places it is often advantageous to adopt the new form of welded roof truss as against the ordinary type of bolted.

THE MULTI-STOREY BUILDING

FLOOR HEIGHTS *v.* ROOF SPACES

With regard to the multi-storey building, certain of my remarks with regard to single-storey buildings apply, especially with regard to the finish adopted. To deal with the question of design, it is unnecessary perhaps for me to say that the effective width of the multi-storey buildings is somewhat dependent upon its height and the ability of the light to reach to the centre. In many cases, however, multi-storey buildings can be wide, providing space is essential for the storage of goods, in the centre of the building. Height floor to floor is dependent upon many things. Generally speaking this varies from 12 feet to 15 feet, whilst the percentage of window space to floor area from 30 per cent. to 35 per cent. Big spans in multi-storey buildings have to be avoided as far as possible on account of cost as, after a certain economical span, the cost of the greater spans goes up by the square instead of in direct proportion.

With regard to construction, the various forms adopted are common knowledge, and therefore the only one I will touch upon is the American mushroom type, now fairly universal both in England and on the Continent in various forms. This type, on account of its unbroken ceiling surface and continuous lighting, allows for greater width of building, and where specially heavy loads have to be carried, and where large spans are not necessary, the form of construction is cheaper than the more ordinary forms.

The extension of multi-storey buildings can be arranged upwards for storage or administrative buildings, but where the buildings are used for manufacture, extension should, as far as possible, be arranged by a lengthening of the building.

Where reinforced concrete or concrete encasement to steel is adopted, care must be taken in the construction to incorporate holes and inserts so planned that most forms of plant can be attached to the fabric without the necessity of continual cutting away from time to time. These attachments can also be used for easy suspension of engineering services and sprinklers.

THE ADDITIONAL SERVICES

I do not think the time at my disposal will allow me to say much more about the main factory building, as I want to touch upon other aspects of life in the factory.

Prior to the Great War the worker used to arrive with his meal in his pocket, and his luncheon hour was spent on his bench by his machine. Such things as this have entirely changed, and in every well-governed factory the worker, male or female, is treated, as he should be treated,

THE BEMBERG FACTORY, DONCASTER
Showing multi-storey and one-storey buildings combined

as a human being, and his health retained to the benefit of the employer. In going over a modern factory it is a subject for general congratulation to see the way works canteens, rest rooms, first-aid departments and recreation rooms are managed. Generally speaking, the canteen is run by the worker for the worker, the employer giving floor space and nothing else. He charges interest on the capital he has expended. Prices are altered monthly according to whether losses or gains have been made, and, generally speaking, the canteen is expected just to pay its way. The thanks of the worker are due to such concerns as the Industrial Health Research Board, the National Institute of Industrial Psychology and the Industrial Welfare Society, as well as many others for the great pains they have taken in protecting the welfare of the industrial worker.

PLACING AND DESIGN OF EXTERNAL EQUIPMENT

I have not touched on such questions as power houses, garage buildings, cycle stores or other such necessities, as the form and type vary so much according to demand, and the usual form of construction and layout are matters of common knowledge to our members. I do, however, wish to say a little more on the æsthetic side of this question, as these various necessities to the factory can mar the design of a factory itself. This branch of design has in the past been left entirely to the engineer, and we can see attached to even good-looking factories horrible water towers, ugly chimneys, badly proportioned conveyor covers, etc. I contend that there is no reason why these attributes to the functioning of a works cannot be treated in a manner to preserve harmonious design throughout a group of factory buildings, and in this slide you will see that an endeavour has been made to give a correct relation between the buildings proper and these conditioning towers. This situation can only be brought about by an exceedingly close co-operation between the architect and the specialist designers of these various accessories to factory plants.

THE FACTORY FACADE

I may be criticised for maintaining that, generally speaking, where an industrial building is visible from any main thoroughfare it demands, and is entitled to, an external appearance worthy of its upbringing. By this I do not mean that the industrialist has got to pay out a lot of money without return. The industrial architect should, without extravagance, endeavour to give a pleasing effect to his façades, relying as far as possible upon the necessary planning and layout for good and proportionate lines. At the risk of being criticised, I will go further, and say that a little money wisely spent in the incorporation of some form of decoration, especially colour, is not money wasted. It has a psychological effect on the worker, if he is a good worker, and good workers look upon their business buildings with pride.

DESIGN AS AN ADVERTISING FACTOR

I am also going to say that an attractive design and a little money spent on something to focus the attention of the public is not wasted money, but is good advertisement, more especially where the manufacture depends for its existence upon the public. A properly conceived and well-designed façade on a main thoroughfare will give proportionately better results than that obtained from the large yearly expenditure so often incurred in usual advertising.

SITE

To deal with the question of sites, this is dependent upon so many things relative to the manufacture that it is difficult for me to give much useful information. Certain manufacturers are restricted to certain areas, perhaps where their raw material or partially manufactured goods come from, or where their finished goods are distributed. Others are dependent upon the nature and quantity of water available, and although I have been asked in the past for advice on such matters, I have found that each case has to be dealt with on its merits. Generally speaking, an architect should, in the selection of a site, take responsibility only for its merits in relation to building costs; he should, however, be sure that public services are economically available. Such other matters as road, rail or water transport, available labour in the district which can readily and easily get to the works, the costs of power supply, rating, etc., have all to be borne in mind, as all such things definitely influence cost of production, and these are just as well dealt with by the keen industrialist as the architect; but the architect should be assured by the client that these matters have not been overlooked. I do, however, impress upon industrialists the necessity of allowing ample room for extension to their plant, and certainly before a site is actually purchased, the architect's views, and also his plans for the complete development of the site, should be considered prior to the commitment being made.

Conditioning Towers
The Bemberg Factory, Doncaster

CONTRACTS

The Conditions of Contract as in general use are applicable to normal factory construction, but it is sometimes necessary to make slight alterations and insert additional clauses to deal with circumstances somewhat peculiar to this type of work.

Once an industrial firm definitely decides to build (after the basic principles of layout and cost have been settled) the most important questions are speed of construction, dates of completion and when occupation can be given, and these points must be fully covered in the Conditions of Contract and Specification.

PENALTY AND BONUS CLAUSES

In the first place, it is in the interests of speedy execution that a clause providing for bonus payment for early completion is inserted, as well as a damage clause for late completion, and, better still, if the amount of daily or weekly bonus for early completion is in excess of the daily or weekly amount assessed as liquidated and ascertained damages, usually called a penalty. The insertion of bonus and penalty clauses alone is not sufficient. An industrial firm requiring a factory by a certain date is not primarily concerned with the penalty or bonus, but essentially with getting the buildings at a specified time, as they have to arrange for the machinery and plant installation, which sometimes takes as long to erect as the building itself.

It must be appreciated that machinery and plant is ordered for delivery at a specified time, and apart from the cost of double handling, storing, etc., of the machinery, the upsetting of their programme of machinery installation is a costly matter, and may have far-reaching results from the production aspect.

ACCELERATION CLAUSE

An additional clause should therefore be inserted in the contract to give the architect power to demand acceleration of any part or parts of the structure which are behind schedule. I will term this clause the "acceleration clause," and this should provide for the contractor providing additional labour, extra or better plant and more materials, and also the working of such overtime or shift work as may be required from time to time by the architect.

The wording of the completion date clause or clauses should incorporate the working to sectional progress charts. A progress chart or schedule should be prepared for each section of the work, and should be sub-divided under various trades and operations, and these sectional progress charts should collectively arrive at the contract date or dates.

PROGRESS CHARTS

These progress charts, if properly prepared in the first instance, are of immense value throughout the progress of the work, not only to the architects, but to the general contractor and the sub-contractors. They are also essential to the proper interpretation of the "acceleration clause" to which I have previously referred. The progress charts should be prepared jointly by the architect and the contractor, and should be very seriously considered before they are finally arranged.

Apart from normal progress they should take into consideration the following :—

(*a*) The fact that certain buildings or sections are more complicated than others.

(*b*) The necessity of completing certain parts before others to enable heavy or intricate machinery or plant to be installed whilst other buildings are being completed.

(*c*) The harmonious working of the installation of services such as electrical power, process steam, compressed air, water, gas, heating and the like.

In conjunction with the progress charts, the contractor should provide for the taking of progress photographs. These will be found useful not only as a pictorial record of the progress, but for reference purposes at completion, when matters arising out of progress, bonus, penalty, acceleration and other clauses are finally settled.

In the case of foreign firms whose principals are abroad, these photographs should serve as a clear explanation of the progress being made; two, three, four or even more photographs should be taken. The position should be nominated according to the size and nature of the building works, and the photographs should be taken weekly in the same position each time.

STORAGE OF MANUFACTURER'S PLANT

Another clause which should be incorporated provides for the factory owner being allowed to bring in, store or erect plant, shafting, machinery, etc., at his own risk when any part or parts of the buildings are in a fit state to receive them, before they are finally completed. This clause may safeguard the contractor against being impeded in his own work or being caused extra costs. The architect should be specifically nominated as the sole judge as to whether the factory owner may or may not enter the building to erect the plant, machinery, etc.

When the building is in the form of an extension to an existing factory, clauses should be inserted in the contract according to the circumstances, and the following might be particularly mentioned:—

(*a*) The contractors may be required to submit to the factory owner's regulations, including checking in and out and submission to search, *e.g.*, the latter stipulation would arise in factories in which precious metals are used.

(*b*) The building work must not impede or unduly inconvenience the factory owner in the carrying on of his manufacturing business.

(*c*) The contractor must protect not only the existing buildings from injury and damage, but also the factory employees from injury from the building operations.

(*d*) There are, of course, other clauses of this nature, but these are generally referred to in the standard Conditions of Contract.

SEPARATE CONTRACTS

Although it is generally an advantage to have the whole of the building work under one main control and responsibility, namely, that of the general contractor, it is sometimes preferable and occasionally economical to separate certain sections or trades for execution under individual contracts. The latter method can be recommended for very large factory works where speed is the essential factor. Take, for instance, the Firestone factory on the Great West Road; great advantages in expeditious execution of the work were obtained through dividing the work into separate sections let under individual contracts. In this case there was an abnormal amount of site excavation to be done, and the contract for this was let whilst the preliminary drawings were being prepared. Whilst this excavation was in progress, the foundation and basement drawings, specification and bills of quantities were prepared and tenders obtained, and immediately after the preliminary excavation was completed the foundation work was commenced. Meantime the constructional steelwork contract was let, and before the foundations and basement were completed, steelwork had been delivered to the site.

The super-structure drawings and bills of quantities were well in hand before this, and before the steelwork was completed the contractor for the super-structure had been selected and was ready to start. Each separate contract contained provisions as to sectional working and completion to enable the contractor to carry out the next operation to follow in proper sequence.

The same process was adopted for the power building to enable the extensive boiler and mechanical firing plant to be installed in sequence.

The success of this method is mainly dependent upon the efficiency in drawing up the progress charts, the proper interlacing of the various separate contracts and keeping the various contractors strictly up to time throughout the whole progress of the works. In this case it is not good enough only to finish in time: it is essential that the sectional dates throughout the whole progress must be rigidly adhered to. It will be readily seen how important the "acceleration clause" is, especially when the operations are divided up amongst several contractors.

Many special clauses could be mentioned as being necessary for the very many different manufacturing processes, but time does not permit of special reference to each of these.

HEATING AND VENTILATION

No hard-and-fast rule for the method of heating and ventilating to be adopted can be laid down, as many varying conditions are required to be met in connection with different industries. For example, a heating system designed for a factory in which the work is of a heavy nature requiring considerable physical effort, would prove totally inadequate for a building where work of a sedentary nature is carried out.

In several factories where steam has been available for process work, I have utilised the excess or waste steam for heating with considerable success and also the achievement of great economy.

A notable instance is the Firestone Tyre building, in which steam at atmospheric pressure is used both for serving the unit heaters in the works and the direct radiation in the offices and other sections of the building.

The unit heaters installed were designed to permit of fresh air being introduced into the building if desired, or by the operation of a damper the air can be recirculated. By this arrangement rapid warming up of the building in the morning can be effected.

A uniform and comfortable warmth is provided by heater units which consist of a heating element or battery enclosed in a casing over which the air is delivered by means of an electrically driven fan.

Control of the heat emission from the units can be effected either by a thermostat operating the fan switch or fitted on the steam supply. The type of unit provided can be conveniently suspended from the roof trusses or fixed on the walls or stanchions, thereby avoiding the necessity for utilising any useful floor space.

In several large factories carried out under my supervision, accelerated hot water heating is installed serving a series of unit heaters, and from this method of warming really good results have been obtained.

From my experience, however, I have found that a certain amount of direct heating either by radiators or pipe coils is advisable, enabling the fans on the heater units to be switched off during the night time, the radiators provided being of sufficient capacity to temper the air in the building; thus during the night it is not essential to run any mechanical equipment.

Wherever possible, I endeavour to avoid the use of any system of warming which necessitates large ducts or metal trunks, as from experience it is found that unless the trunks are constructed of sufficient size to allow of regular cleaning, they become dust-laden and unhygienic.

I am unconcerned with the merits or demerits of the several types of heating and ventilating equipment, but am always careful to satisfy myself that the system of warming employed in buildings in which I am interested should be economical, not only in first cost, but in performance, and designed to suit the character of the industry for which the factory is constructed.

CONCLUSION

Now, Mr. President, in spite of the fact that there are several aspects of this problem upon which I have not touched, the time demands that I come to a rapid conclusion. I shall no doubt be criticised for what I have

not said as well as for what I have said, and I invite such criticism with pleasure.

I have endeavoured to show in my remarks this evening that if a factory building is to be constructed in a truly economical manner and in such a way that it will be of real service to the user and not a subject of heavy annual charge for maintenance, the responsibility for its design and construction should be placed with a qualified architect. I am pleased to say that during recent years the necessity for this course of action has become more and more appreciated, and that the activities of the works engineer and the enterprising contractor as a tame architect are, through bitter experience, diminishing rapidly.

Vote of Thanks and Discussion

Mr. A. W. KENYON [*F.*]: Mr. President, ladies and gentlemen, it has fallen to my happy lot this evening to propose a vote of thanks to Mr. Wallis for his delightful and instructive paper. When we think of factories we are apt to think chiefly of what has been done in America, Germany and Holland; but after to-night we shall all agree that there has been a terrific amount of work put into our factories in England since the War. Mr. Wallis has rather dealt specially this evening with the large factory, but there is also the small factory, for which architects are not so frequently employed. I would like to say to all manufacturers that the architect can be of as much value to him in erecting and working out his scheme for a small factory as he can for a large one.

There are three types of clients whom I have come across. First, there is the type who knows exactly what he wants, and brings to the architect the whole of his lay-out, from which he will not deviate an inch. He knows exactly what machinery he wants, and he practically asks you to build a carcase round it. There is another type, the manufacturer of a new type of material which is being produced, who comes without the lay-out, and is not sure what type of machinery he will put in; he wants so many feet of space designed for him in which he can put his plant. A third type is the manufacturer who is wandering about the country looking for a factory to fit his process. I think the architect can definitely help all those three types in the early stages.

It is very stimulating to hear Mr. Wallis say what effect architecture is having on advertising to-day, and I certainly think that the corrugated iron building is gradually passing away. Manufacturers are becoming proud of their buildings, no matter how small their factories may be; they are realising that good buildings are so much better, from an advertising point of view, for the betterment of their workpeople, and so on, than were the old ramshackle factories. And the old roof truss is gradually disappearing from this country, and I am glad to hear that the Americans, too, are gradually doing away with it.

There are two points I would like to raise. First, I would like to ask if Mr. Wallis can give us some idea of the method of calculating the proportion of skylight area to floor area; and secondly, Mr. Wallis did not touch on the question of cost; I presume he left it out of his paper purposely, or perhaps he had not time to deal with it. Manufacturers invariably ask, at an early stage, how much a factory will cost for a given floor area. I should much like to ask Mr. Wallis if he can give us any data on that point.

Mr. President, ladies and gentlemen, I have very great pleasure, on your behalf, in proposing this vote of thanks to Mr. Wallis for the fine lecture we have had this evening.

Professor C. H. REILLY, O.B.E., M.A. [*V.-P.*]: Mr. President, ladies and gentlemen, I am glad, for many reasons, to have this chance of speaking to-night. In the first place, because this is one of the rather rare occasions when the Institute deals with modern architecture, and secondly, because Mr. Wallis, so I understand, thinks that the schools do not deal with modern architecture; I certainly gathered that he thinks the Liverpool School does not. I may tell him that when we design a factory at Liverpool we do not even give it an Egyptian façade! Nevertheless, I should like to congratulate Mr. Wallis, as I am sure all of us want to do, on his contribution to factory design —that is probably why there are so many here to-night. I do cordially congratulate him on the fine series of factories on the Great West Road, which make all the domestic architecture, for miles round, look absurd.

I am not sure that our particular difficulties are not due to our very uneconomical and unplanned life, by which we muddle up solitary factories, big factories, churches, and old factories all in one quarter of a town. We are gradually learning to zone our towns, but somehow the factories do not seem to keep to the zones, as far as I can tell.

Lancashire—where I come from—is losing its factories, and perhaps rightly. In the eighteenth and the early part of the nineteenth centuries it built very simple and functional factories for small machinery, the great square blocks of the Lancashire spinning mills. The bad time was the beginning of the century, when those great simple masses were decorated with terra-cotta, and the Orders applied to the façades. Recently the owner of a great factory in Lancashire came to me, when he was considering the doubling of one of his enormous blocks, the new half being built to contain tanks, and he asked me whether he should continue the Italian façade and cornice right round the building at a cost of £30,000, or should he leave it all out? I told him to leave it all out, and so saved him the £30,000!—for which he gave me ten guineas. I feel sure however, that it was very good advice! Later I was at Northwich, at the Brunner Mond works—which I advise everybody in the South to see. There they show their great tanks, whose sloping sides and exciting shapes tower high up against the sky, and yet are combined together in just the way that Mendelsohn combines them, so that the combination makes an exciting and interesting whole. I wish very much that Mr. Wallis had shown us to-night some of Mendelsohn's fine compositions.

I should like to ask Mr. Wallis whether he, like Mendelsohn, makes models for his factories. Mendelsohn's models show the effect of contrasting masses—a high block with low, sloping roofs and railway lines, and so on, which compose together into an architectural whole. There is no façade making about the

Mendelsohn type of design in America and Germany. There is still some façade making in the factories on the Great West Road. It may be right on that road, though I maintain that factories should not be on that road at all. Factories, I think, should be modelled in mass, and should be rather like the work of the sculptor when the materials are harsh and the lumps are large.

With these few remarks, ladies and gentlemen, I am very glad indeed to have this opportunity of speaking to-night, and of seconding the vote of thanks on this interesting occasion.

The vote of thanks having been proposed and seconded, the President then opened the meeting for discussion.

Mr. BERESFORD PITE [*F.*]: I should be glad if Mr. Wallis would give us his experience of ferro-concrete *versus* brick in factory construction; if he will tell us how he constructs upper floors in the case of the multi-storeyed factories. Will he also say whether the question of subdivision for fire resistance has always to be considered; it has to be in London, we know. Also, what would be his proposals for covering those large flat roofs which have a great exposure to the sun? There is yet one other question I would like to ask, and that is, the cost per foot cube?

Mr. R. WYNN OWEN [*F.*]: Mr. Wallis, in his paper, incidentally referred to the necessity of the builder of a factory, when he purchases his site, having some idea of the comprehensive scheme which ultimately he will require to be put into operation. That, it seems to me, is a necessary piece of forethought in the case of every large building scheme. The point on which I would like enlightenment is this: If a large scheme is in prospect, only a portion of which is to be dealt with at the outset, what would be Mr. Wallis's idea of the nature of the construction most suitable? Would he prefer a steel structure with a ferro-concrete structure? I think a ferro-concrete structure would be rather difficult in view of future alterations having to be made. That is the main point. I have to deal with buildings which require continual alteration, with the result that I am continually presented with a problem which is of importance in the construction of factories. But even in a comprehensive scheme, where design in a final form is not feasible, is it not conceivable that as the trade of the factory increases or alters, the original scheme must be departed from as time goes on?—even if the scheme does develop, it seldom reaches finality in the form in which it was originally conceived. In the interesting factories which Mr. Wallis has shown us on the screen, I should like to ask Mr. Wallis whether it has been necessary in the factories which we have seen on the screen for the factory architect to co-operate with a civil engineer. Or is it possible for the factory architect, as I think it should be, to deal with the entire structure, from the foundations to the completed building?

I am very pleased to have the opportunity of supporting this vote of thanks.

The PRESIDENT then called on Professor Percy Nobbs [*F.*], Past-president of the Royal Architectural Institute of Canada.

Professor PERCY NOBBS, M.A., R.C.A. [*F.*], Past-president of the Royal Architectural Institute of Canada: Following the train of thought of the last speaker, may I venture to introduce the phrase "unit-planning" into the discussion. When I learned what the subject for this evening was to be, my first thought was, "If Frank Darling could only be here." Mr. Darling, whom you honoured with the Institute Medal, was a brilliant planner. He had an uncanny instinct for extracting a structural unit that would meet varied requirements by sheer analysis. As he used to say, "It will all be changed inside when they add to it." In my own experience the application of this principle has been of use on many occasions. It is so easy to contrive over-specialised accommodation. If a building is likely to grow, as factories in Canada usually do, excess space due to structural simplification is often an economy in the long run.

May I add to what I have said as an architect, a word as a professor, taking my cue from Professor Reilly. At M'Gill we regard as factory problems all those involving human activity and operations with materials. We seek solution in terms of the work that goes in the building as a first step to the discovery of form.

Before taking my seat may I draw attention to Canadian grain elevators. These industrial structures are perhaps the best things we have produced in the way of architecture.

Mr. LAURENCE GOTCH [*F.*]: There is one small point which has not been referred to. Professor Reilly has criticised the question of factories being on the Great West Road, and Egyptian façades, and so on; but I should like to thank Messrs. Wallis, Gilbert and Partners for the delightful picture one is presented with on coming along home after a good day's golf and seeing these floodlighted buildings. They give one a sense of joy, so that I wish to thank his firm for the delightful picture they give me when I am on that road.

Mr. H. S. GOODHART-RENDEL [*F.*]: I should like to add my thanks to those of the last speaker to Messrs. Wallis, Gilbert and Partners for the extremely pleasing façades for which they are responsible, and also for the other works of the firm which, as specimens of architecture, I greatly admire. I share Professor Reilly's doubts as to whether those buildings would not be better with something else behind than factories, which cover one front. I think we all owe a great deal to Wallis, Gilbert and Partners for the fact that since there is this demand they have met it in the most practical way.

I hope we shall soon outgrow the making of these veneers to factories; they have, however, chosen a so much more appropriate method of architectural veneer than anything we had before, and they have done it with much scholarship and skill. So, though I hope all such veneer will disappear shortly, I think we can thank Messrs. Wallis, Gilbert and Partners for having done very much of the best of its sort that we have yet seen in this country.

Mr. HAL WILLIAMS: I would like to ask Mr. Wallis whether he has taken special means of dealing with the white cement which he appears to employ so largely in his factories. My own experience of that is, that though it is quite beautiful for the first eighteen months or so of its career, it crazes very badly, and in due course the cracks become filled with soot and dirt, so that in four or five years' time the beautiful building looks rather like a painted lady in the morning, after her face has been divorced for some little time from her vanity bag! It would be distressing to us to feel that the specimens we have had shown us to-night on the screen may share that fate in a few years' time, and I should be very interested to know how Mr. Wallis has dealt with that problem, as I find it a very serious one. There is no doubt that a beautiful effect can be obtained by beautiful white-cemented tiles, but what worries me is, how long they are going to last like that.

The PRESIDENT: Before putting the motion I would like to emphasise the very great importance of the subject brought

before us to-night. We are, I suppose, the oldest industrialised country, and we suffer the penalty of that in having some of the oldest and the most out-of-date factories. I think that the renewing of our factories is, probably, a matter which is of very great importance to our efficiency. Too many of them are buried in cramped sites in the centres of our towns. There has been a marked tendency recently to move out; and I should like to relate to you something which the lecturer told me but which he has not stated in his lecture: it is, that in some of these cases they have a very positive result in increased efficiency, due to the better conditions under which the operatives work. He said that they have a definite percentage—he mentioned as much as 20 per cent.—of increased efficiency recorded in moving from an old cramped factory into one where the health conditions, the lighting and other conditions, are better. That is a very important human fact, which does, I think, tend to suggest the importance of our encouraging manufacturers to take advantage of the opportunities which can be afforded by these new factories.

I have great pleasure in putting to you this motion that we give our best thanks to the lecturer for the address which he has given us this evening.

It was carried by acclamation.

Mr. THOMAS WALLIS (in reply): Mr. President, ladies and gentlemen, I think you have heard sufficient of my voice this evening, but I wish to express to you my great appreciation of your kindness in listening so attentively to my paper. I have not dealt with a number of subjects which I would have liked to have touched on, and possibly I have not placed before you anything extraordinary, anything which you did not know before; but what I have tried to do is to speak of the atmosphere of the factory in a general way. I could have enlarged the paper by talking about the administration block in the factory, which is, in itself, quite a big thing, and should be planned in conjunction with the factory proper; but the time has not been long enough to enable me to do that.

With regard to the questions which have been asked, I do not think I will attempt to answer them here to-night, but, if you will permit me, Sir, I will answer them in writing to the JOURNAL.*

One speaker asked me about the extension of factories. All architects, wherever possible, should extend their planning so as to occupy the whole of the available site, bearing in mind that sections or units can be built as and when desired. That would obviate considerable trouble in the cutting of concrete, and so on. Units should be regarded as absolutely essential, but those units should be over the whole area. You should develop the whole site, not merely what is wanted at the moment. The possibilities must always be in mind so that future requirements can be met properly.

I thank you so much, ladies and gentlemen, and you Mr. President, for allowing me to have this opportunity of speaking on this subject.

* We will publish Mr. Thomas Wallis's written reply in the next number.

A Repton Portfolio

JOHN SUMMERSON

Of the three Reptons, Humphry, the landscape gardener, was the only one to achieve authentic fame. His sons, George Stanley and John Adey, are remembered, though not so often or so easily. George retired from professional life before he had time to become famous. His elopement with a Lord Chancellor's daughter remains his most memorable feat. John was stone deaf; he built little and is hardly remembered at all.

But all three Reptons were fine draughtsmen and capable, sometimes brilliant, designers, so that a chance discovery of thirty-eight drawings and prints done by or associated with them is not without interest. The drawings turned up outside a London print shop where, unidentified, they were being offered for sale as more or less worthless scraps. Their previous history I could not ascertain. Two had been sold from the collection when I found it, though by good luck they seem to have been just the very two (tracings, I believe, of tile designs) which could most easily be spared.

Here, to begin with, is a brief summary of the known facts concerning the Reptons.*

HUMPHRY REPTON (1752–1818) set up in Norwich about the year 1773, as a general merchant. His business soon failed, whereupon he moved to a place near Aylsham, discharging the duties of a country gentleman and studying botany and gardening. He went to Ireland as secretary to William Windham, soon returned to England and began to live at Hare Street, Romford; he lost more money in a mail-coach experiment and finally, turning his hobby into a profession, called himself a Landscape Gardener and embarked, at the age of thirty-nine, upon his brilliant and successful career. Taking the achievement of Lancelot Brown as his starting point, he worked out elaborate theories concerning the "improvement" of estates. These theories are set forth in his books, particularly *Sketches and Hints on Landscape Gardening* (1794) and *Fragments on the Theory of Landscape Gardening* (1816). He remodelled numerous estates up and down the country, preparing in each case a "Red Book" (there is one, for Langley Park, at the R.I.B.A.) containing water-colour views of the suggested improvements; attached to the views were flaps which, laid down, showed the actual state of the land, and raised up, revealed the possibilities discovered by Repton. Repton is honoured by Jane Austen in *Mansfield Park*, and he is the Mr. Marmaduke Milestone of Thomas Love Peacock's *Headlong Hall*. He "occasionally acted as architect until assisted by two of his sons." After a coach accident in 1811, his activities diminished.

JOHN ADEY REPTON (1775–1860), eldest son of Humphry, was a pupil of William Wilkins of Norwich (not, as is sometimes stated, William Wilkins, R.A.), for whom he made complete measured drawings of Norwich Cathedral. From 1793–1797 he was assistant to John Nash, with whom he altered Corsham House, afterwards claiming full credit for this design. He then co-operated with his father on the architectural side of the latter's practice. He was stone deaf from infancy, and on this account was obliged to live in retirement. In 1809 he won first prize for public buildings in Parliament Square and in 1812 second prize for Bethlehem Hospital; in 1834 he competed in the Houses of Parliament competition. In spite of his deafness and a profound ignorance of German he travelled to Germany in 1822 to assist several princes (including the great Pückler-Muskau) with their improvements. His interests centred round Gothic design and archæology; he wrote frequently for *Archæologia*, and even contributed a paper on Gothic mouldings to the Cambridge Camden Society's *Ecclesiologist*. He lived at Springfield, Essex, where he designed a Romanesque church in 1842. He helped with his father's books, and himself wrote a romance called "Rhadapanthus" and a book on beards.

GEORGE STANLEY REPTON (died 1858), fourth son of Humphry, entered Nash's office about 1795 and eventually became Nash's senior assistant and possibly partner. He remodelled the exterior of the Haymarket Opera with Nash in 1818–20, and in 1819–20 designed St. Philip's Chapel, Regent Street, of which his brother was parson. In 1817 he secretly married Elizabeth Scott, daughter of Lord Chancellor Eldon, who was at first extremely angry at the match. Repton subsequently designed several country houses in the West of England, and eventually retired from practice.

Only two of the drawings in the collection can with any confidence be set down as the work of Humphry Repton, and they are the two sketches (on a single sheet) illustrated on page 314 and frontispiece. Unhappily there is no clue to their identity, but a comparison with the sketches in the Langley Park Red Book at the R.I.B.A. (about 1790) reveals a close similarity both in brush-work and general treatment. If Humphry Repton was the actual executant of the sketches in this Red Book these two drawings may safely be ascribed to him. The two designs do not appear to bear any relationship to each other, though a superficial similarity in breadth and height might lead one to suppose that they did. The design with the fasces-columns and festooned draperies is faintly reminiscent of the orangery proposed, but not carried out, for the Pavilion at Brighton.†

Among the earlier designs in the collection are two which seem to belong to the period when Humphry, partnered by his two sons, was conducting an architectural practice side by side with the landscape work. The "Proposed alterations to a House near Bath"‡ (two drawings, watermark 1804, one showing the house as existing) consist of a raised colonnade between two pavilions, one of which contains a staircase and the other shelves for plants, the whole attached to an early eighteenth-century house, typical of the Bath neighbourhood. The character of the additions is reminiscent of an imaginary house in a sketch by Humphry in the Print Room of the

* See articles in the *A.P.S. Dictionary*, the *D.N.B.*, and *Gent.'s Mag.*, 1861, pp. 107-110.

† See *Designs for the Pavilion at Brighton*, 1808.

‡ Where, it appears, John Adey and his father were in the habit of wintering.

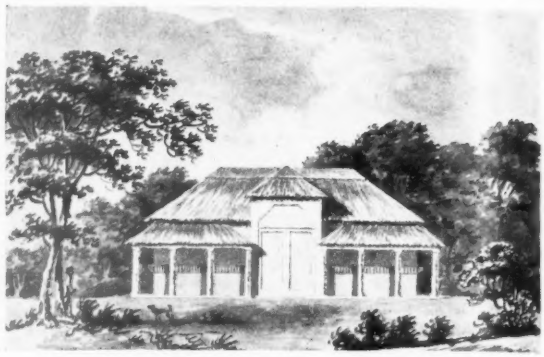
British Museum. This Bath house has not been identified; it is, moreover, probable that the "proposed alterations" were never carried out.*

The other design of early character, which cannot be assigned to one Repton in preference to another, is the meticulously drawn but unfinished perspective marked "Biddulph Esq." on the face and "Designed for Burton Park Sussex," on the back. Here is a mysterious affair, because Burton Park† was a large house designed by Leoni and burnt down in 1862; it must have been standing when this drawing was made. The Repton design is a good deal smaller than was Leoni's house and cannot represent a proposal for remodelling. It is a charming design, resembling the first design for Widworthy (see later) in the arrangement of Ionic portico and steps, but more refined in detail. One might put it down as an early product of one of the sons under his father's guidance; but that is only a guess. It is significant that, although the architecture of the house is finely and completely drawn, the landscape and surroundings have not even been sketched in. Possibly this part awaited the brush of another artist—very likely Humphry himself.

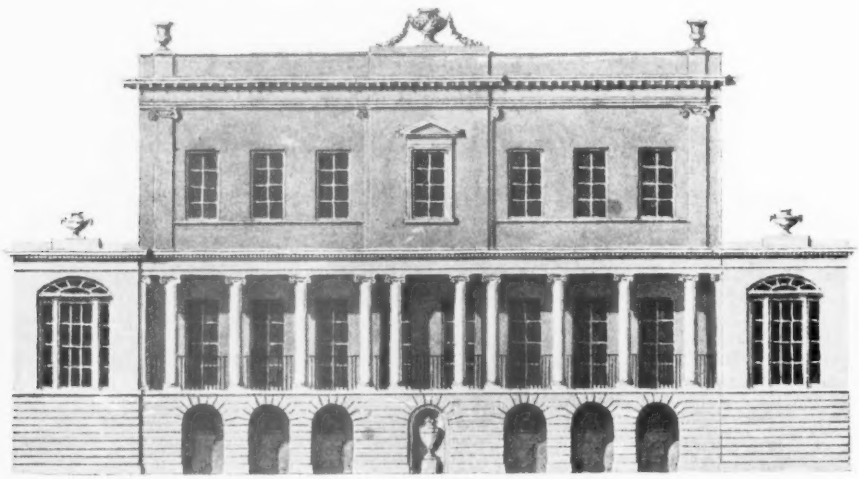
The remainder of the drawings can, with one or two exceptions, be ascribed with some degree of certainty either to John Adey Repton, George Stanley Repton, or the office of John Nash. About 1795, Humphry Repton prepared a scheme for the improvement of Magdalen College, Oxford. A set of drawings with a written description was submitted to the Magdalen authorities in January, 1801. These drawings, preserved at the College, show an elaborate project involving the Gothicising of the plain eighteenth-century North buildings and the linking of this to the old buildings by a new Gothic block, thereby forming, with one side of the old cloister, a quadrangle

* These and many other drawings in the collection are identified by inscriptions in pencil in a neat hand, followed in two cases by the initials G. S. R. If, as seems likely, these notes were all done at the same time, the expression "proposed" would suggest that the proposals got no further than paper.

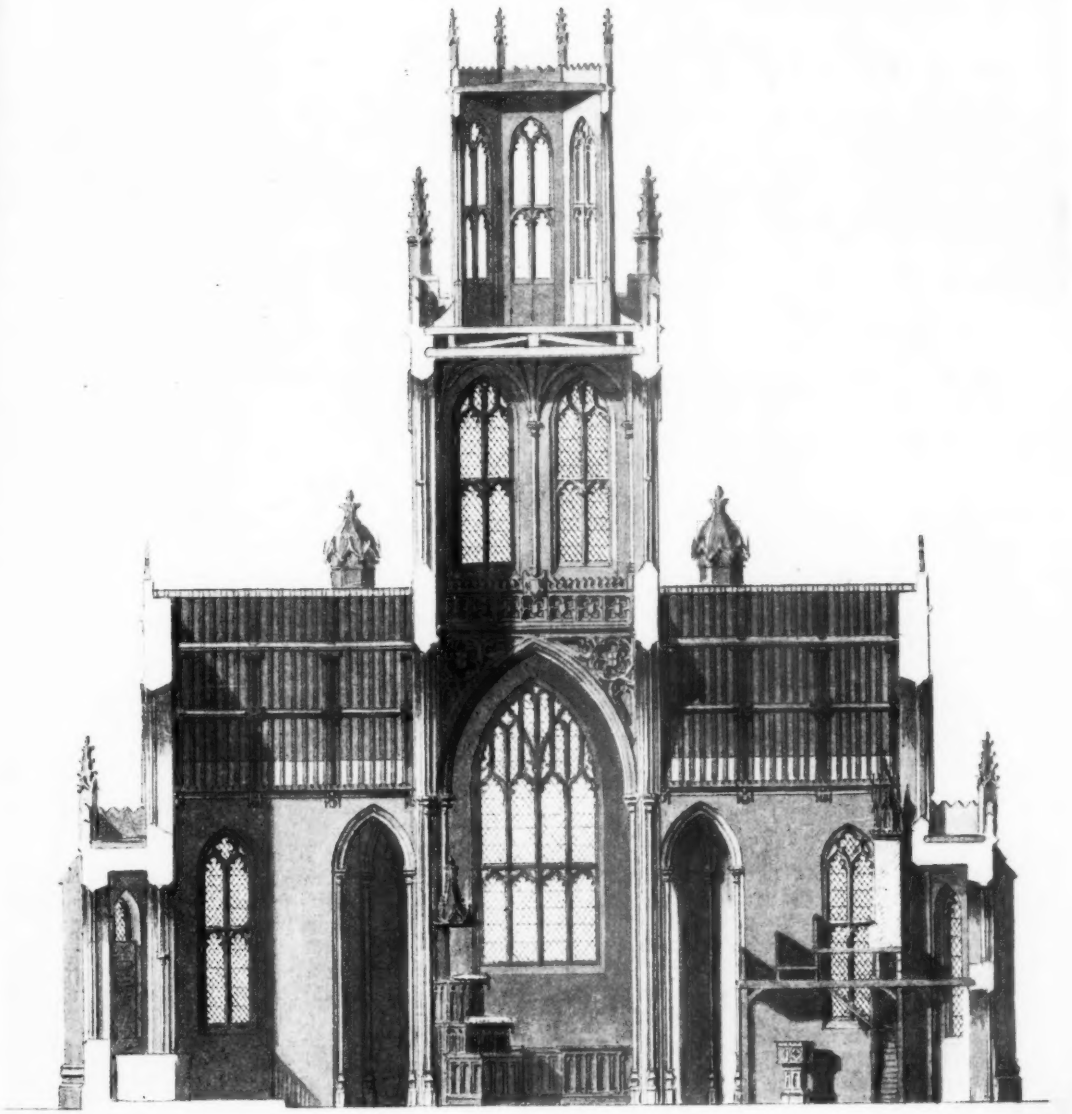
† Illustrated in Neale, *Views of Seats*, Vol. 1 (2nd series).



PAVILION BY HUMPHRY REPTON
The companion to the drawing given as frontispiece

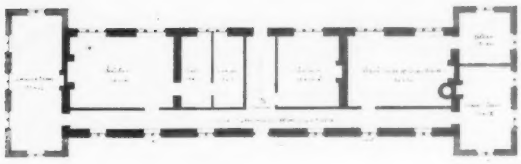


ALTERATIONS TO A HOUSE NEAR BATH
The colonnade, vases and central window constitute the new work



EAST-WEST SECTION OF A CHURCH
Probably by J. A. Repton

"PROPOSED WORKHOUSE FOR THE PARISH OF CRAYFORD." Probably by Humphry and J. A. Repton



open towards the Cherwell. In the middle of Repton's new block was to be the President's Lodging, projecting a little way into the quad. and considerably further at the back. A beautifully drawn half-inch detail of the quad. façade of this building is among the drawings in our collection. Very likely it was this actual drawing which was shown at the R.A. in 1801, when Humphry exhibited the "general effect" of the Magdalen scheme and John Adey contributed "The President's Lodgings" and "The Imperial Gate."* The improvements at Magdalen were, of course, never carried out.† The design is unsatisfactory on the whole, though intelligently copied, in parts, from fifteenth-century examples.

Of the half-dozen Gothic designs in the collection, the Magdalen Gatehouse is the most considerable. More interesting as a design is the little church whose section is illustrated (p. 315). Unfortunately, plans and elevations are missing and nobody has been able to identify the design with that of an existing building. The unusual thing about it is the use of the "four-column" plan (for the section is east-west, not transeptal as at first appears). The seating capacity seems to be minute and would scarcely serve the purposes of anything more than a private chapel. Certain of the details closely resemble the Magdalen drawing, and it is tempting to put this design also to the credit of John Adey, who was, in any case, the more Gothically inclined of the two brothers. But nothing is proved, and ascription to George Stanley is not ruled out. It is worth observing, however, that the latter built a small church for Lord Eldon (1833) at Kingston, in Dorset,‡ which does not bear the very slightest resemblance, either in character or arrangement, to this design. Moreover, none of George's mediæval houses reveal a comparable facility in Gothic detail.

Humphry and his eldest son were probably jointly concerned in the design of the "Proposed Workhouse for the Parish of Crayford," the simplest, though perhaps the most original design in the collection. It is unusual to find a work of the Picturesque school with such calculated and telling restraint; the general lines of this design are far more like Voysey or early Lutyens than any designer of the Repton period.

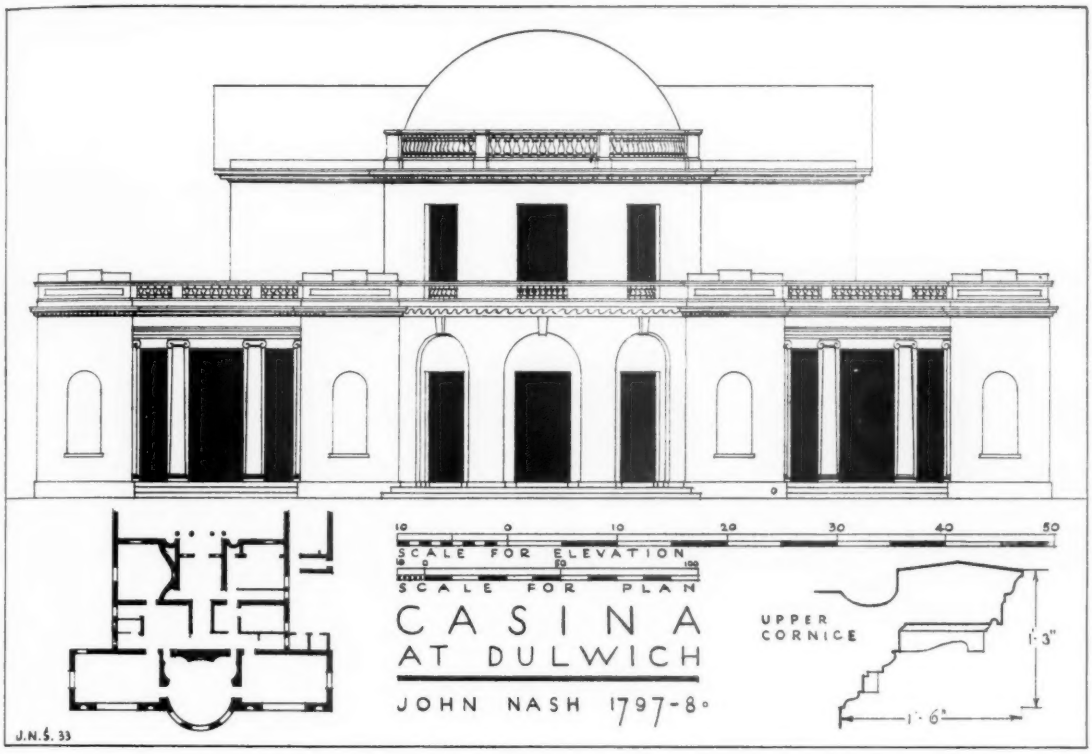
The history of the workhouse project is told in the *Fragments on the Theory and Practice of Landscape Gardening*.§ The Rev. Edward Repton (who, later on, procured for his brother George the building of St. Philip's, Regent Street) was curate at Crayford. In 1816 he wrote to his father on behalf of a committee, asking him to find a site and prepare a design for a new workhouse in the parish. Humphry's letter to his son, outlining his proposals, is quoted at length in the book; a design is given, too, but it does not much resemble the one in our collection; it has gables and a bell-cote. The committee looked at the site and were delighted. They thought it admirable; so

* This highly unnecessary feature in the scheme was to be contrived in the middle of the Gothicised north buildings. There is an elevation of the design, resembling our drawing in execution, in the library at Magdalen. There is no detail of the President's lodgings at Magdalen.

† It is worth observing that Nash prepared a design for a new quad. at Magdalen in 1801 (see A.P.S. Dict., s.v. Nash). The professional relations of Nash and the Reptons are not always very clear.

‡ See Twiss, H., *Life of Lord Chancellor Eldon*, for an illustration.

§ Page 599 in Loudon's edition of Repton's works.



CASINA, DULWICH, BY JOHN NASH. REDRAWN FROM AN ORIGINAL AMONG THE REPTON DRAWINGS
The section of the cornice is taken through the pediments

admirable, indeed, that to build a poor-house on it would be a mistake. One must exercise discretion. The poor could stay where they were (they were used to it) and some houses for decent people (who could pay rent) erected on the site. Repton's scheme, frustrated by its very excellence, was humane; the inmates were to cultivate a pretty garden (laid out, of course, by Repton) and sell the produce at booths by the roadside. They were not to be idle, nor too comfortable (see the plan), and they were not to trespass on amenities.

It is impossible to guess whether the scheme illustrated came before or after the one to which the letter refers. Neither seems to have been built.

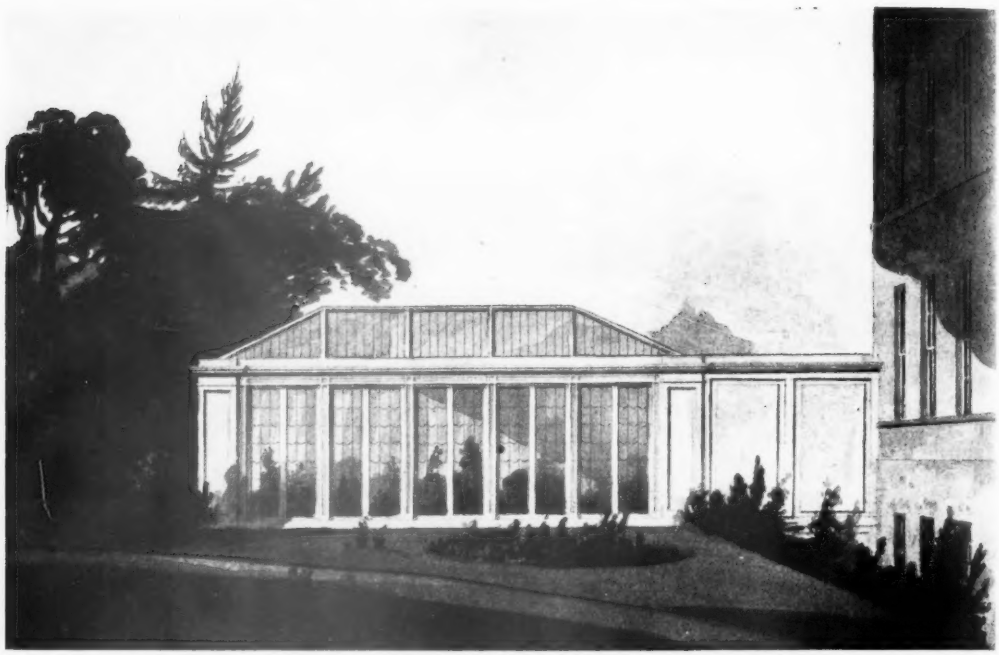
John Adey may have been responsible for an unpleasant Gothic design consisting of a plan with alternative elevations, one Norman mixed with Perpendicular and the other (roughly speaking) Perpendicular. The watermark is 1804, and it is difficult to account for the crudity of this design, compared with the Magdalen Gateway of at least four years earlier. There is, however, an engraving in the British Museum, by John Adey, called "Hall for a Gothic Mansion" and dated 1802, which shows a Gothic design of rather similar character.

Two sheets of neat sketches of chimneys and pinnacles, which look as if they had been prepared for an engraver, are very likely connected with John Adey's archæological pursuits. I have not, however, been able to find them engraved among his published works. Two mounted tracings of quarry designs from the *Ecclesiologist** are probably likewise echoes of John's Gothic enthusiasm.

Both Humphry Repton and his sons were closely associated with John Nash. Humphry was concerned, as landscape gardener, with several of Nash's country houses, and both John and George did important work as his assistants. It is, therefore, not surprising to find, in a Repton portfolio, drawings which clearly had their origin in Nash's office.

There are two such drawings in our collection. One, a design for a classical house, is marked in one corner

* Vol. 3, 1844, p. 20.



"Conservatory built for Mr. Beckford at Southampton." By G. S. Repton

"Richard Shawe, Esq., Dulwich." Now in the cemetery at Dulwich Village stands a bulky Regency monument, by Day of Camberwell, with this inscription:—

IN MEMORY OF
RICHARD SHAWE ESQ.
OF CASINA, DULWICH
WHO DEPARTED THIS LIFE ON
THE 11TH DAY OF AUGUST 1816
AGED 61 YEARS.

If, prompted by certain mannerisms in the design of the house, we look up Nash in the A.P.S. dictionary, we find in the list of his works, "1797-8, Casino, Dulwich, for R. Shaw." References are given to Hassell's *Views** and Dallaway's *Anecdotes*.† The former, after describing Casina as standing "on an elevated brow overlooking the rural village of Dulwich and commanding an extensive range of country," mentions that the grounds were laid out by Mr. Repton, the principal feature being an ornamental canal. Repton's idea (says Hassell) was that this canal might eventually be continued through other gentlemen's grounds, thus greatly enriching the whole landscape; but the idea was probably too communal for the gentlemen concerned. Hassell gives a small and ill-drawn aquatint of the house and its surroundings. Dallaway says that "at Dulwich is a Casino of Nash, in which he has introduced a new style of Country House, by combining the advantages of an English arrangement with the beauty of a Palladian plan." If we examine the drawings we shall find the "advantage of an English arrangement" somewhat problematic.

The design is very Nash. It is difficult to explain the oddities of the plan because none of the rooms is labelled; the elevation (only one is given) has all the up-to-date tricks which the architect of Regent Street rarely omitted. The drawings are fully dimensioned like working drawings and there are details of cornice and steps. The watermark (1803) would seem to belie the A.P.S. dictionary's statement that the house was built in 1797-8, but for the fact that Dallaway was published in 1800.‡ The house was pulled down within the last twenty years. The site (lying in the angle of Herne Hill and Red Post Hill) is covered with a housing estate; at the foot of the hill is a pond surrounded by asphalte, a surviving fragment, no doubt, of Repton's canal.

The other Nash drawing is an elevation "designed for the College of Physicians in Regent Street." Nash's architecture at its best was moderate and this elevation has most of his faults; it is overdressed and lacking in any coherent scheme of proportion. It is surmounted by one

* Hassell, J., *Views of Noblemen and Gentlemen's Seats . . . in the Counties adjoining London*, 1804, etc.

† Dallaway, J., *Anecdotes of the Arts in England*, 1800.

‡ A view of Casina was exhibited by Nash at the R.A. in 1797.

WIDWORTHY COURT, DEVON, BY G. S. REPTON, 1830. The portico was not built

of the ridiculous bald domes in which Nash delighted (a feature aptly satirised in the print on p. 323). It is not known for which part of Regent Street the design was intended. About 1819 the College of Physicians was considering the purchase of a house near Hanover Square and, about the same time, of a house in Pall Mall.* Their present quarters in Trafalgar Square were built between 1824 and 1827, so that the drawing may fairly safely be dated between 1819 and 1824.

Perhaps the most important and interesting things in the collection are the drawings definitely attributable to George Stanley Repton. These may be considered in roughly chronological order.

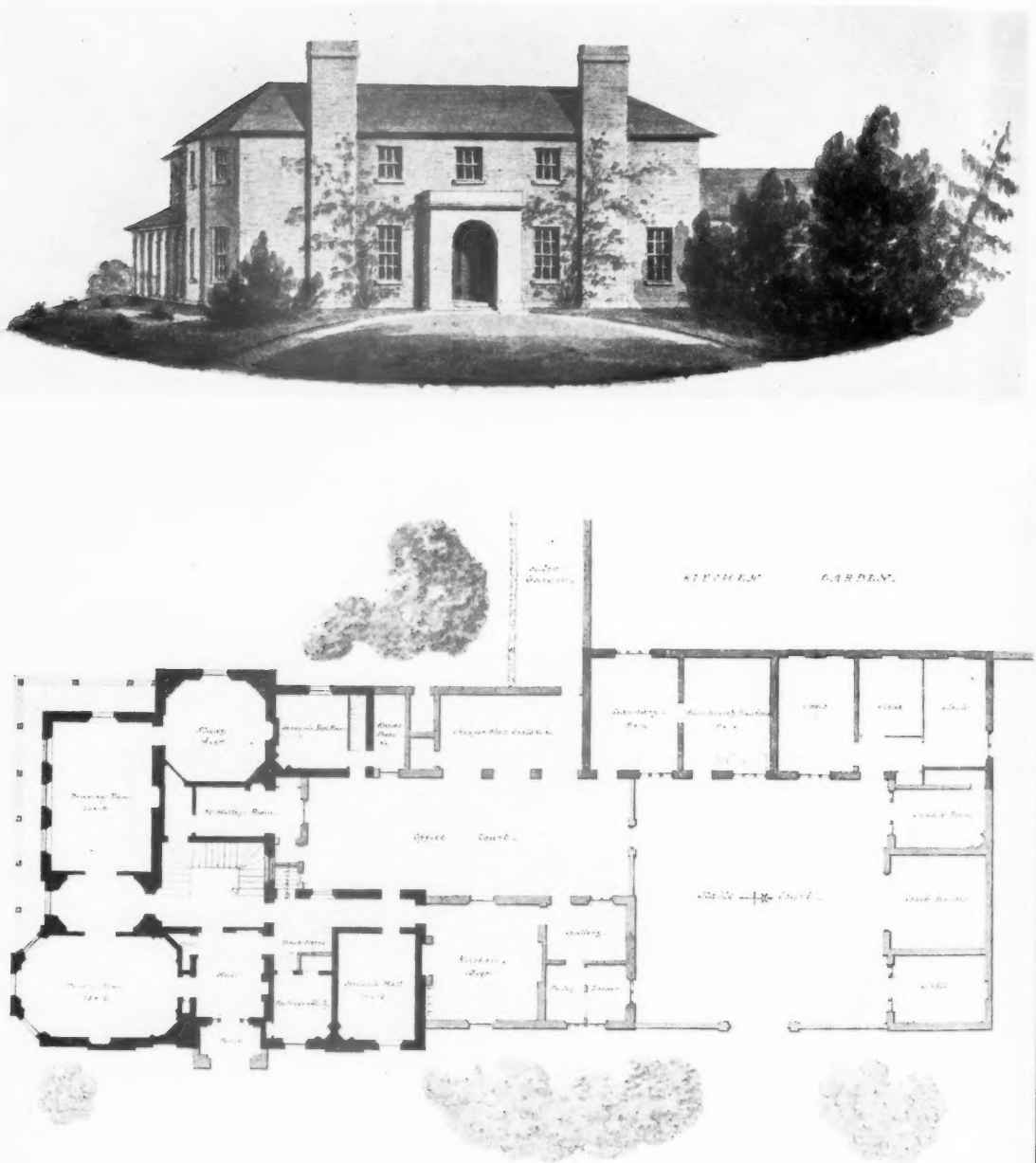
The earliest is the delightful "Conservatory built for Mr. Beckford at Southampton," represented by a plan and an exquisite elevation in water-colour. The plan bears the initials G. S. R. The design has a marked Regency character and no doubt belongs between 1810 and 1820. "The Southampton Register" for 1811 gives: "Beckford, F. L., Esq., Above Bar." In Fletcher's "Southampton Directory," 1834, we find a house with this address called Beckford House and this house still stands. I have not seen it and only surmise that it is the house concerned. I am told that it is much altered and probably the conservatory has in any case disappeared. The Beckford concerned was pretty certainly Francis Love Beckford living 1823), first cousin of William Beckford of Fonthill, though it may possibly be Francis Love's son (b. 1789) who bore the same name.†

The "Dog-kennels designed for Lord Foley at Witley Court" consist of four brick octagons, with pyramidal

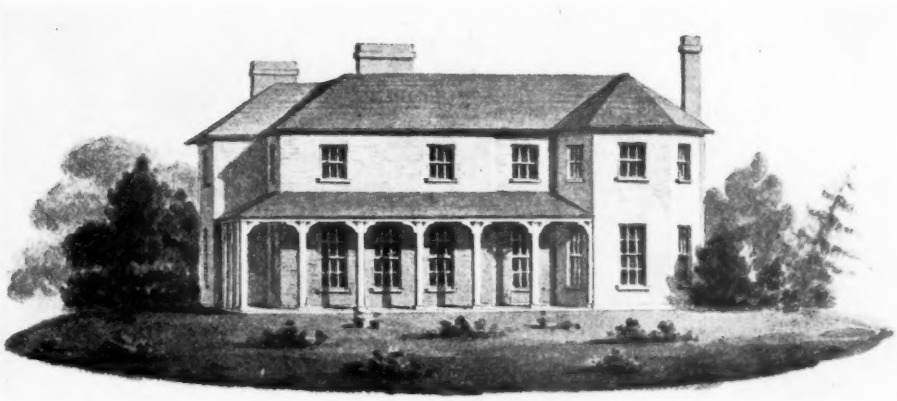
WIDWORTHY COURT: PLAN, AS PROPOSED
(This is shown upside down in order to read with the perspective above)

* Information kindly supplied by Mr. Barlow, Secretary of the College.

† See the genealogical table in Britton, *Illustrations of Fonthill*, 1823.



BURGH HALL, NEAR AYLSHAM, NORFOLK: BY G. S. REPTON
Perspective and plan



BURGH HALL, FROM THE SOUTH

roofs, clustered round a similar but taller octagon with an upper storey and a chimney. Humphry Repton seems to have had some connection with Witley* and possibly this design represents a legacy to George from his father's practice. The watermark is 1828.

Now we come to three houses designed by George Stanley Repton between 1827 and 1836. Repton enjoyed a substantial reputation as a designer of country houses. In 1827, Ackermann's "Repository" comments on the "scientific and able direction of that celebrated architect, G. S. Repton, Esq.," when describing his work at Follaton. In 1828 the same periodical illustrates his house for E. P. Bastard at Kitley. Follaton is classical, with an Ionic portico on the Ilissus model; Kitley is Tudor with a hall "composed entirely of Gothic wainscot." Both houses are in Devonshire.

Widworthy Court is also in Devonshire. Hidden from the road by magnificent woods but with a southward prospect across rolling country, the house lies about two and a half miles south-east of Honiton. The sixteenth century manor-house of the Marwoods stands in increasing ruin near the church. It was "in a decayed state" when Edward Marwood Elton (later Sir Edward, baronet) decided to build the new house in the late eighteen-twenties. Possibly Elton had seen and liked Mr. Cary's house at Follaton, for Repton started off by showing him something on the same lines, a gaunt stone house with a tall Ionic portico towards the south. The preliminary design for Widworthy, represented by a plan and two perspectives, is one of the best things in the collection. The drawings have at some time been heavily marked and annotated in pencil and, although industriously deleted, most of the comments can still be made out. Edward Elton knew very well what he wanted and was having no nonsense from the celebrated architect. He crossed out the portico†, adding a note that it was "to be done away with to [reduce] the expense." He wisely eliminated the uncomfortably vast "Gallery," altered the over-all dimensions, changed the fenestration and even took liberties with the ornaments. At the risk of being old-fashioned, he wanted a plain, useful, seemly house.

As Widworthy stands to-day it is superficially very like this design of Repton's minus the portico. As Repton knew, Greek porticos look supremely beautiful in English parks; no Attic spring-time can offer them a more fantastic setting than an English autumn. But from the inside they are gloomy, and anyway they are costly, so the portico was not built. The Gallery and Stair-case were rolled into one and covered with a segmental ceiling; the stair climbs up the outer side of the present hall and continues along one of the ends, reaching an open cantilevered passage projecting from the inner side. The details, both inside and out, show Repton as an exponent of the short-lived Palladian revival which came between the Greek phase and the Italian freedom introduced by Barry (the Travellers' Club was built in 1829). Repton had always been Roman rather than Greek, and his Regent Street church, 1818, contained passages reminiscent of Chambers's designs. The marble fireplaces at Widworthy, particularly the large one in the staircase-hall, with heraldry, cherubs' heads, and an old portrait, are strongly reminiscent of mid-eighteenth century work.

The house is built of flint-stones covered with stucco to imitate stone, except in the stables, where the flint face is exposed. The details are of local sand-stone. The stables, with heavy arches and a pretty Italian bell-cote, are probably by Repton, though they do not appear on the preliminary plan.

Widworthy is a serious design, perhaps a little too serious, especially in an age which was already having wild fun with Gothic. Repton could do serious classic

* Loudon, p. 417.

† Large-scale working details, however, of an applied portico are preserved at Widworthy.

DUMBLETON, WORCESTERSHIRE: BY G. S. REPTON

and he could do exciting Gothic; that he could, on occasion, do something delightful between the two is proved by the three drawings of a house at Burgh-next-Aylsham, Norfolk, prepared for James H. Holley, Esq. I believe that this house has been, if not entirely re-built, at least altered beyond recognition.

The plan is ingeniously romantic and must have been hardly less entertaining in fact than on paper. It is full of surprises, and pursues a minute and charming symmetry through a frankly asymmetrical plan. Observe the relations between the dining-room and the hall and between the study and the rest of the house; also the adroit placing of Mr. Holley's room—remote, yet easily accessible from every part. There is nothing here as grand as Widworthy; but could the purposes of a squire's house of a century ago be more exactly or more gracefully served?

The elevations are plain. There is a singularly clumsy porch between the two projecting chimneys and along two sides runs an almost commonplace verandah. But taken as a whole, the house is charming; one would like to know far more about Mr. Holley and the circumstances in which he built his house.

The third country house is Dumbleton in Worcestershire, which still exists, though not, I understand, exactly as shown in the drawings. Apart from the placing of the staircase, which in this case is at the far end of the hall opposite the entrance, the plan somewhat resembles Widworthy (as built). But the elevations are Tudor and, of their kind, distinctly good. There is a very rough alternative plan (initialled G.S.R. March 1832), cribbed directly from the first Widworthy design but appropriately Gothicised. The watermark on the drawings is 1827; the house is said to have been built between 1830 and 1836 to replace a seventeenth century house which had too many rats in it.

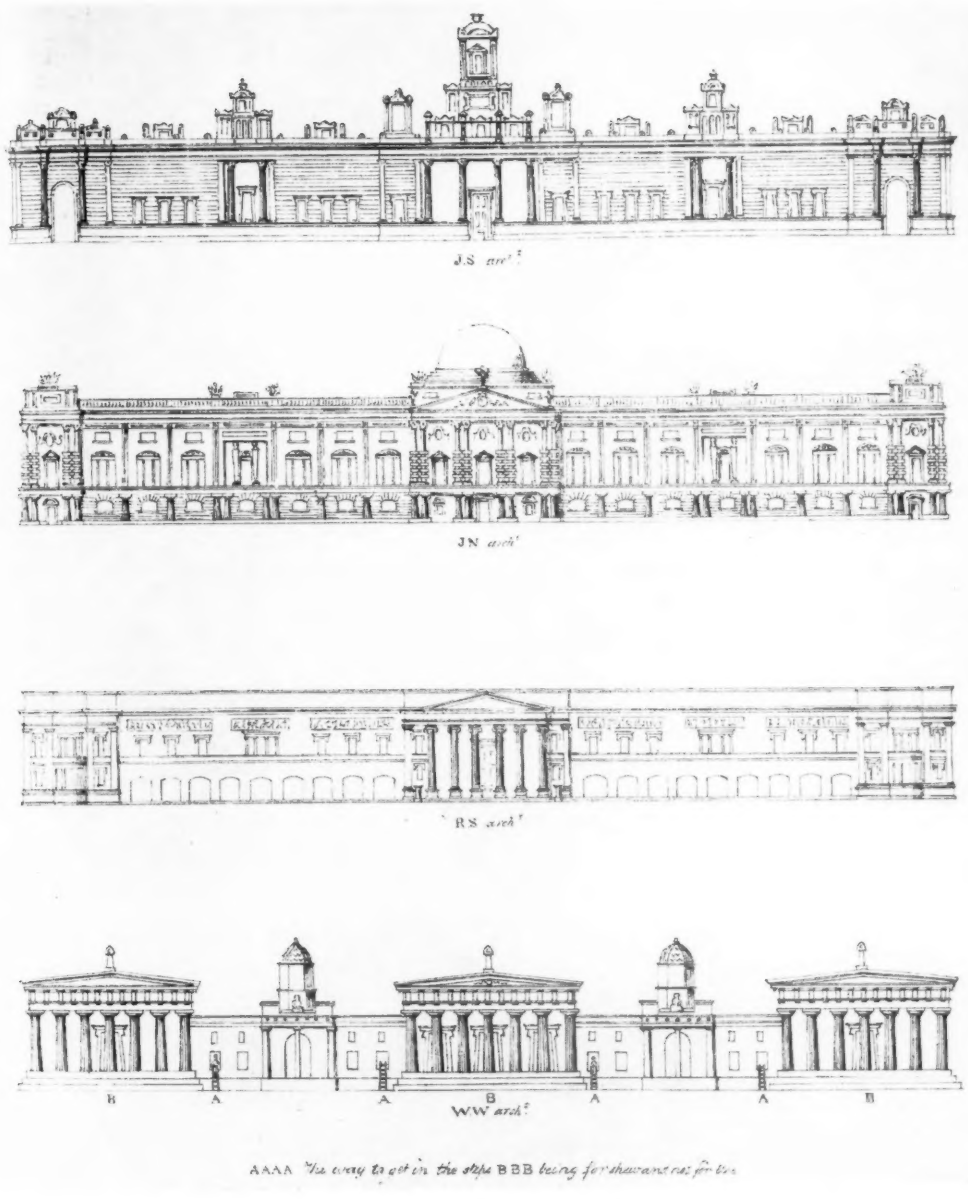
There is an unfinished perspective (watermark 1804) of a house very like Dumbleton but apparently an addition to some much older building. I have not been able to identify it.

"Mr. Jones Loyds (*sic*) Stables, Woods Mews, Park Lane," are shown in a neat monochrome elevation and a plan. There are three arched entrances with elaborately panelled doors, and three windows above. No trace of this building remains.

Finally there is the design (two elevations and a plan) for a "hall and market-place at Chipping Norton—not as executed." The design actually carried out represents a great improvement on the rather stolid Roman building shown in these drawings. It is, in fact, a most charming little structure which might almost have come from one of the best of the eighteenth century Palladians.* It was erected in 1842, by public subscription and there is nothing but circumstantial evidence to connect it with either of the Reptons. G. S. Repton, the only likely one, is supposed to have retired from practice long before 1842, but considering the style of the design, the draughtsmanship and its presence among these drawings, it is more probably his than anyone else's.

It is hard to account for the presence, among these Repton drawings, of a careful pen-and-ink sketch, in a style not at all resembling that of any of the other drawings, of the mediæval bell-turret at Corston Church, Wiltshire. A note on the drawing informs us that the turret was "copied for Mr. Yonge's new church at Otterbourne, Hants." Now this church, built for Keble by Owen Carter of Winchester in 1837-8, owed much to the enthusiasm and generosity of Charlotte Yonge's father, the Mr. Yonge mentioned above. He was responsible for "almost all the ideas and many of the drawings of the details." He had, it appears, "the power of military

* The lower story, formerly open, is now built up. See Gardner, *History of Oxfordshire*, 1852.



LITHOGRAPH (PROBABLY ABOUT 1835)
Caricaturing the works of Soane ("picturesque variety"), Nash ("ingenious novelty"), Smirke ("chaste simplicity"), and Wilkins ("classical correctness")

drawing, acquired before he was sixteen years old, and a great admiration for York Cathedral."* He used to travel about in search of details for his church and the drawing must have been done for him or, just possibly, by him.

There remain a few prints, two of which are of interest. One (an aquatint) is a section through John Rennie's Highgate Archway, dated "London, 20 April,

* Yonge, C.M. *John Keble's Parishes*, p. 100.

Photo: Percy Simms and Son

THE TOWN HALL, CHIPPING NORTON, 1842

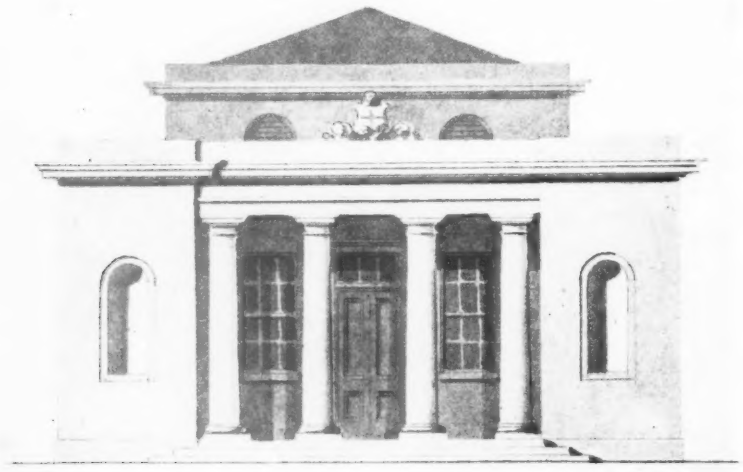
1811." This low, parabolic tunnel collapsed in the same year and was followed by the loftier archway which survived till 1900. As Nash designed the frontispiece to the arch, the presence of this print in the collection is easily explained.

The other interesting print is an amusing early nineteenth century satire. The only other copy I am aware of is in the Soane Museum. The title of this mischievous piece of work is: "Design for the New Houses of Parliament by four Eminent Hands collected by J.B. A.S.S. and submitted to the admiration of the Public as Exemplars of Architectural perfection and as eminently displaying the several Qualifications of Picturesque Variety—Ingenious Novelty—Chaste Simplicity—and Classical Correctness." The J.B. A.S.S. is, of course, John Britton, F.S.A. The four elevations are ingenious pastiches of the works of Soane, Nash, Smirke and Wilkins respectively. At the present time, when we are apt to swallow the works of these gentlemen somewhat uncritically, this document deserves to be widely known. Its authorship is problematic. The obvious ascription would be to Pugin, and this possibility cannot be ruled out. The old Houses of Parliament were burnt in 1834 and *Contrasts* appeared in 1836. The technique is such as Pugin sometimes used to delineate things he very much disliked. No doubt the print was (privately) circulated among Nash's assistants and thus came into the Reptons' hands.

There is no means of knowing by whom the drawings in this Repton portfolio were collected, by whom preserved, or how they came to be lying among a job lot of Edwardian prints in the forlorn guise of sixpenny bric-à-brac. But we may rejoice in their timely emergence, for they shed new light on three accomplished artists who were eminent in an age which designed well and drew superbly.

NOTE OF ACKNOWLEDGMENT

The author wishes to record his indebtedness to the following who have helped him with information or suggestions: Mrs. Marwood-Elton, of Widworthy; Mr. John Betjeman; Mr. Albert H. Davis, of Southampton; Mr. G. R. Driver, of Magdalen College, Oxford; Mr. Goodhart-Rendel; Mr. R. Kerrison, of Burgh; Mr. F.W. Morris, of Chipping Norton; and Mr. Maurice E. Yonge, of Otterbourne.



THE TOWN HALL, CHIPPING NORTON, AS PROPOSED. Probably by G. S. Repton

The First Refresher Course for Architects

AT THE BUILDING RESEARCH STATION

A PERSONAL ACCOUNT

L. STUART STANLEY, M.A. [F.]

A few weeks ago there appeared in the R.I.B.A. JOURNAL the announcement of a "Refresher Course" for architects at the Building Research Station. I received particulars and decided to avail myself of the opportunity of attending. The first course having now been completed it may interest members of the Institute to hear what took place.

The course, which was arranged by the R.I.B.A. in conjunction with the Building Research Station, commenced on 6 February and continued for two weeks. The number of those in the first group was twelve, including members from as far away as Bristol and Glasgow. The course is now being repeated for a second party of members.

The programme consisted mainly of lectures supported by laboratory work, for which we were divided into small groups; the daily activities being wound up by a colloquium, a kind of conversazione to encourage a general exchange of views and experience between ourselves and the members of the Research Station staff. The lectures, which lasted for about an hour each day, were given on the following subjects: Cement and Concrete, Plastering Materials, The Economics of the Building Industry, Bricks and Tiles, Building Stones, Bitumens, Paint Problems, Cast Stone, Illumination, Heating, Fire Resistance, Stone Decay and Preservation, Moisture Movement and Acoustics.

On the first day we were introduced by means of a general tour to the activities of the Station. Features of outstanding interest were the materials exposed to natural weathering test, such as the "brick cemetery," where all types of bricks are half buried in the earth and weathering effects recorded; exposure tests as applied to renderings, tiles, mortars, natural and artificial stones, paints and reinforced concrete piles immersed in sea water. The equipment of the laboratories was full of interest to us, particularly the accelerated weathering tank, which achieves as much in a few weeks as would normally take years to accomplish, and the apparatus for determining the correct orientation of buildings.

Visits to the various laboratories gave us opportunities of handling the materials, and we were shown what tests were applied in each particular case. It was soon evident that the whole course would be both interesting and instructive and that we would all benefit consi erably by it. As at least one tangible result we have all come away with very valuable sets of notes.

By coming, as we did, into direct contact with the chemists and the physicists in their laboratories, we were introduced to the building material in a very special, personal and uncommon way, which can only be realised and appreciated by those actually attending a course of this nature. I can give a few outstanding instances under general headings of subjects to which we can give any amount of profitable study: (*a*) The soluble salts in building materials and the effects of moisture generally on the material; (*b*) the "workability" aspect of the material—I have in mind a sharp aggregate in concrete as compared with a "rounder" one—washed sand as opposed to sand containing, say, 5 per cent. of loam; (*c*) the creep theory of reinforced concrete under load; (*d*) proprietory compounds, including paints, cast stones, waterproofers, asphalts, "preservers" and jointless floors; (*e*) the air and water content in concrete; (*f*) the electrolytic action set up by metals coming into contact with each other and the corrosion of lead in buildings.

Each morning and afternoon an hour and forty-five minutes was devoted to laboratory work, when each member of the course had the opportunity of making a personal examination of the material under study, particularly as to its chemical composition and building utility in the light of the most recent discoveries.

The organisation of the course was very largely due to the keenness of Mr. P. S. Barnett, whose untimely and sudden death occurred just before the start of the course —he was buried on the first day. His death cast a gloom over the whole Station, and was a personal loss to every member of the staff. Mr. Barnett was to have figured very prominently in the conduct of the course, as he was pre-eminently the architect-scientist; his knowledge and conception of the practical essentials in our study would have come into operation as a medium between ourselves and the scientists.

We left the Building Research Station with a feeling of having been brought into closer contact with an organisation working directly in our interests. Its existence means protection against the use of inferior proprietory substances having no standard specification, or anything by which the materials can be identified definitely, and which are sometimes worse than useless. If architects will insist upon a report of any material before using it, particularly that sold under a "trade name," one of the main objects of the Research Station will have been achieved.

There is no doubt that all those who attended the course are most grateful to Dr. Stradling and his staff for making our visit such a success. The lecturers and demonstrators were most patient and helpful, and showed a real desire to instruct us in this very important aspect of our work. This course, which was the first of its kind to be instituted, and was more or less in the nature of an experiment, will, I hope, be the forerunner of many more conducted on similar lines. It will, no doubt, be slightly amended to suit the convenience of those architects who are unable to leave their offices for long periods at a stretch.

We all felt that we were greatly privileged to have had the opportunity of attending the course; it has certainly fostered a very keen desire to go further into the study of the characteristics and properties of building materials, about which there appears to be so much to learn.

Reviews

A GUIDE TO THE APPRECIATION OF ARCHITECTURE

How To Look at Buildings, *by Darcy Braddell. London: Methuen. 1932. 6s.*

Reviewed by H. M. FLETCHER [*F.*]

It will not be the fault of the architects of this generation if the clients of the next remain uneducated in architecture. Mr. Manning Robertson and others have led the way, and now Mr. Darcy Braddell tells young people "How to look at Buildings." His object, as he described it at the end of his book, is to save the country from the amateurishness which through its indifference to method and plan is responsible for the plague of mean building. "We *must* plan. But it is no use attempting to do so until there is a public opinion formed to see that the plans are good ones. This can only be brought about by a willingness on the part of everybody to be educated in the appreciation of architecture."

Mr. Braddell has not shirked the difficulties; rather he has attacked them from the front, and openly discusses subjects which many architects, especially when writing for the young, prefer to regard as arcana or mysteries too holy for the lay mind to contemplate. Expression, Composition, Proportion, Scale, are the titles of some of his chapters. He describes and analyses buildings of different periods, not from the "period" point of view, but simply as equal members of the community of buildings. As you may infer from his chapter-headings, he does not disguise his classic preferences, but principles mean more to him than schools and rules, so that he can be fair to a Gothic building and can contemplate a "modernist" architect with unruffled temper. He appreciates the Einstein tower for what it is, and will not condemn Mendelsohn for not doing what he did not set out to do. Such an attitude will induce a young audience to listen to his championships of order, serenity and proportion far more surely than bad language and foaming at the mouth.

It will be seen that the book is written for boys and girls who are already disposed to an interest in architecture. It assumes a fair architectural intelligence in its readers, and that is all to the good. The style is conversational, but mercifully free from facetiousness. Here and there Mr. Braddell is weak in his facts—Inigo Jones did not design the windows of the Banqueting Hall "undivided by mullion or transom" (p. 40), as the contemporary prints of Charles I's execution will show. Nor did Robert Adam design the bedroom windows of No. 20 St. James's Square "in the form of a perfect square" (p. 58), unless Mr. Braddell's own drawing on p. 57 is incorrect, or unless his idea of perfection in squares is non-Euclidean. These may be trifles, but young readers have keen eyes for inconsistencies, and a teacher is apt to be more persuasive if he cannot be caught out.

One would like to hear Mr. Braddell presiding at a discussion by his audience of some of his more provocative points—as, how much of its unity would the Underground Building lose if the sculptures of the winds were removed? What is the emotional value of Bush House? How little boredom is induced by a diet of ox-skulls? We hope his book will find its place on the list of those which the Board of Architectural Education recommends to the higher forms of schools, and that the boys and girls who read it will hand it on to their parents.

ARCHITECTURAL TASTE

Real Architecture: or the Rights and Wrongs of Taste. *By Thomas Henry Lyon. Cambridge: Heffer. 1932.*

Reviewed by S. E. DYKES BOWER [*A.*]

In a small compass this book comprises so much good sense and puts so clearly and succinctly those elementary truths about architecture that still cannot be repeated too often, that it is a pity that it should be saddled with three initial disadvantages—its title, sub-title and the drawing which appears on its wrapper. None of these is worthy of it and their effect in combination may well be to deter many who would otherwise read and enjoy it. It is primarily a book for the layman, possibly for the university don in particular, since the illustrative references are chiefly drawn from Oxford and Cambridge and some of the fallacies most forcefully exposed, it would seem die hardly in those seats of learning. This may account for the severely intellectual arguments the author uses to castigate the wrong and fortify the right. The appeal of the book all through is to Reason, which, though in one sense its strength, is in another sense its misfortune, since the number of those to whom Reason, in matters of art, has any power to appeal must be infinitesimal.

The eighteenth century has been called the Age of Reason, and it is perhaps no coincidence that its architecture is here held up for our special admiration. To our departure from its ideals of sanity and scholarship is attributed the present bathos, and the last chapter is a plea for returning, if not to its letter, at any rate to its spirit, as "an admirable basis upon which to develop present-day Architecture." Unhappily the humane culture of that age has left very few traces. The great body of ideas behind the popular attitude towards architecture is inherited from the nineteenth century; "taste" has become encrusted and distorted by irrelevant theories that are widely reverenced as historical realities. Three of the commonest and most fatuous of these are very satisfactorily demolished in the chapter on "Natural Materials," "Hand-made and Machine-made" and "The Craftsman the Designer." But another chapter entitled "Dirt" deals with what may be classed as a twentieth-century heresy. Too much is heard nowadays of the beauty of "dirt" whether merely as making a building look old or giving it "texture." We need to be reminded that dirt is not merely very destructive but "takes the sunlight out of architecture, it defeats the purpose of every moulding; shadows lose all demarcation, and intended contrasts in materials are obliterated under a dull lifeless covering." The regular cleansing of buildings, especially old buildings that often deserve it as much as old pictures, is rightly advocated as contributing to their preservation as well as to their beauty.

It is to be hoped that a wide public will read and digest this book.

GREEK SCULPTURE

Greek Sculpture and Painting to the End of the Hellenistic Period. *By J. D. Beazley and Bernard Ashmole. Cambridge University Press, 1932. 10s. 6d.*

Reviewed by RONALD P. JONES, M.A. [*F.*].

This book is a reprint of the chapters contributed by the authors to the Cambridge Ancient History, with some revision of the text and several additional illustrations.

It presents in a very attractive and readable form a general

survey of these fine arts through about three centuries, and confirms our impression of the surprising disproportion between the influence which they have exerted over the whole subsequent history of art, and the scanty and fragmentary amount of authentic work which has survived: the same might certainly be said of architecture, but at least the temples which have come down to us are "originals" and we do not have to estimate the value of the Parthenon from a debased Roman copy in a provincial town: but in sculpture the survival of anything at all has only been due to a chance event, such as that which preserved Pompeii for our edification as an example of Roman art.

The existence of the wonderful archaic statues of the Acropolis we owe to the complete ruthlessness of the Periclean age in its treatment of earlier work, so that instead of being restored as venerable relics they were used as waste material for making up the level of the ground for new buildings. Large bronzes have survived owing to fortunate wrecks during the Roman Empire when shiploads of "antiques" were converging on Rome from all parts of the Greek world: and now that all possible land sites have been opened up, the sea offers us the only promising and exciting source of further finds, like the magnificent bronze Zeus brought up only a few years ago off Cape Artemision.

After the archaic period, and apart from architectural sculpture on temples, we have to depend more and more on marble, later copies of bronze originals, copies varying in merit but obviously far below the quality of the Greek work, and turned out in large numbers as part of the ordinary decoration of a well-equipped Roman house. It happens that we can realise the gulf between the original and the copy in the case of Praxiteles, because fate has handed down to us his Hermes at Olympia in fairly complete condition, discovered below the pavement just in front of the niche in which Pausanias describes having seen it, and where its base still rests in place—though it is fair to say that, in spite of this fact, its genuineness has been questioned by some critics. It was evidently a famous work, though we know of no copies having been made for the Romans (is it possible that it was intentionally buried, to save it from a "collector"?). On the other hand, we have more than one copy, but not the original, of his masterpiece, the Aphrodite of Cnidos, on which the authors observe that "judging by these, it is difficult to understand the reputation of the statue in antiquity." This difference in our appreciation, as between the original and the copy, has always to be borne in mind when we try to estimate a lost work merely by comparing a literary account of its own time with a clumsy and spiritless version of a copyist.

Most archaic sculpture was closely related to architecture, either by attachment to a background, as in reliefs, or by standing in a recess or niche: consequently it was designed to be seen directly from the front and the single figure is always symmetrical on a centre line. If there is to be a side view, it must be in flat profile—the side elevation, so to speak, of the block from which it is cut—and there are no intermediate positions. This tradition of selected viewpoints persisted at the back of the sculptor's mind right down to the middle of the fourth century and it is pointed out that the Apoxyomenus of Lysippus is the first completely realistic figure in "three dimensions," designed to be looked at from all possible points of view, but consequently with no chosen and perfect view.

Greek painting falls into two sharply contrasted sections so far as direct evidence goes. The art of vase-painting, which in these centuries was brought to a perfection never since approached, is displayed to us in an enormous mass of authentic material from which we can trace every development of national style or personal artistic temperament. On the other hand, we have not a scrap of genuine "painting" in the modern sense of fresco or easel pictures, and have to depend on literary description, or on late and inferior copies of famous works which are reproduced in a scheme of Roman wall decoration.

We can infer that the art was sculpturesque and concerned almost entirely with figure subjects, while the fortunate survival at Pompeii of a mosaic copy of the famous "Alexander and Darius" shows us that the later artists had mastered not only the power of representing rapid action in a decorative way, but all the devices of modelling, shadow and reflection, which were recovered by the painters of the Renaissance after the long period of stiff and formal convention imposed by the Byzantine tradition.

The average reader will notice two drawbacks in the arrangement of the book: where an object is not illustrated, he is repeatedly referred to a German work, which, unless he is at the moment in a specialist library, he is most unlikely to have before him: and except for a list of illustrations, there is no index.

BRIDGE ARCHITECTURE

THE BRIDGES OF THE RHINE, ROMAN, MEDIÆVAL AND MODERN. *By Karl Möhringer. Messkirch, Baden. Joh. Möhringer. 1931. 25 Reichsmarks.*

There is no form of architecture that so readily can become the vehicle of social and æsthetic sentiment as the bridge, and there is no type of building which so little needs the bolstering of literary sentiment to make it interesting. Bridge building has received its full allowance of picturesque writing and all too little straightforward treatment such as that given to the bridges of the Rhine by Karl Möhringer in the book under review. Because of its faithful and entirely unsentimental manner Herr Möhringer's book gains enormously in interest, and is probably one of the most enthralling books on the subject that has ever appeared.

Within the limits of the first fifty or so pages are illustrated and described nearly fifty bridges of all types and ages, from the Roman bridge at Mayence, the foundations of which were unearthed when the new bridge was being built in 1880, to the latest bridges opened prior to the publication of the book in 1931. The second half of the book, also about fifty pages long, is occupied by detailed accounts of the design and construction of a number of important modern bridges, chief among which is the Cologne-Mülheim bridge, in the reviewer's unhesitating opinion the most beautiful bridge in the world, old or new.

Although geographically his field is limited, æsthetically it is as wide as could be desired, and those interested in arguments on taste and the influence of materials or social environment on design can draw some pretty morals from the book. Compare, for instance, the Hohenzollern bridge at Cologne (1907), or the Strasburg-Kehl railway bridge with its cast-iron entrances in the spindliest of Gothic (1858), to the aforementioned Mülheim bridge; a moral of dignity and impudence, though, heaven knows, William II probably thought his bridge dignified enough when it was built. Compare the clumsy overladen embryonic form of the steelwork of the old railway bridge at Hünigen (1876) to the Sudbrüche, Cologne (1906), or the Mülheim bridge, or the fanciful wiggly lines, produced, no doubt, by pure engineering reasoning (no "art" about it) of the Hassfurt bridge (1866), to the unadorned and relentless, yet no less graceful, Frederich Ebert bridge at Mannheim, or the Ernst Waltz bridge at Heidelberg.

The Cologne-Mülheim bridge, which is easily the most important bridge considered, rightly receives the lion's share. The description is very full and explains the factors dictating its interesting design in considerable detail. The bridge which, with a span of 1,033 feet, is the longest suspension bridge in Europe, is designed so that the stiffening girders between the piers and the land take the pull from the cables, keeping the forces as it were within the structure without exerting any considerable pull on the land anchorage. The original competition was won by a design for an arch bridge, rather like the Sydney Harbour Bridge, but this design was discarded in favour of the present design "after a protracted discussion of the merits of both designs from the point of view of æsthetical and technical considerations."

Those who say that aesthetic considerations have no part in modern engineering can be told that in the Mülheim Bridge "The architectural treatment of the structure lies in expression of the structural principles and achievement of decorative effect by an outline of the greatest simplicity. To harmonise the work with the general architectural features of the city of Cologne, and in particular with the famous Gothic cathedral, it was found desirable to give the bridge slender and graceful contours."

Within its self-appointed limits this book is so entirely admirable that a reviewer can only give an unreserved recommendation. Its author, as is evident from the choice of illustrations and his comments, is an engineer with an acute architectural sense (which is perhaps even preferable to an architect with an engineering sense). The translation is faultless, and the diagrams are all dimensioned in feet and inches for English readers.

ARCHITECTURE IN FINLAND

BYGGNADSKONST I FINLAND. *Published by Suomen Arkkitehtiliitto Helsingfors. 1932.*

Reviewed by LL. E. WILLIAMS [*A.*].

It was a happy inspiration which led the Association of Finnish Architects to publish this volume. From time to time illustrations in the Press have given English architects tantalising glimpses of modern work in Finland, but no comprehensive survey has ever before been attempted with the express purpose of tracing the growth and trend of the national architecture since the emancipation of the country from Russian control in 1918. Illustrations of the work of living architects predominate, but the selection committee have exhibited a catholic sense in including examples of every type and purpose. The photographs of the pre-war work are interesting, as they serve to show the steady drift of modern design away from the monumental style of Sonck and Saarinen, which at one time bid fair to dominate the country. Several causes have led to its abandonment, the most powerful probably being the separation of Finland from Russia after the failure of the Red Revolution in 1918, and the consequent revival of the age-old Swedish friendship and affinities in literature and art which have produced a strong reaction towards the lighter and happier architecture of modern Sweden. To-day the most advanced school, including men such as Alvar Aalto and Erik Bryggman, are working along the same lines as the Swedish functionalists, using steel and concrete in purely constructional forms. When completed, Aalto's hospital for consumptives at Paimo will be one of the most daringly designed as well as one of the most up to date sanatoria in Europe.

Official architecture in Finland has always attained a high level of design since the old Russian days when Helsingfors was laid out at the beginning of the last century as the new capital by C. L. Engel in the severe neo-classic style of St. Petersburg. The modern work of the Helsingfors Building Department under the direction of Gunnar Taucher is equally distinguished, but now the inspiration derives from Stockholm. The illustrations here given show the variety of work undertaken by the department—children's homes, schools, technical institutes, and housing schemes—and all have a freshness and vitality about them which is not always associated with departmental design.

Finnish architects have always given considerable attention to the problems of town planning, and during the last ten years much study has been given to rational development whereby irrevocable decisions are avoided and the growth of new districts are guided rather than dictated. The garden suburb movement has produced attractive villages like Käpylä, on the outskirts of Helsingfors, where various types of houses and flats are constructed entirely of wood in the Scandinavian manner and painted bright colours.

The most important building erected in Finland since 1918 is Siren's Parliament House. The material is Helsingfors grey granite, and the main elevation with its fourteen immense columns raised on a podium is strictly academic even to dullness, but it is redeemed by that attractive austerity which above the 55th parallel seems to result from an elongation of the accepted classic proportions. The photographs of the interior show details of charming character and modern feeling, and the plans and sections, which are reproduced on a large enough scale to be readable, include the two main floors. And while speaking of plans one might add that these accompany the photographs of nearly every important building illustrated in the book.

Most of the buildings have been selected from the neighbourhood of Helsingfors, but the S.O.K. flour mills at Vibourg and the offices for the Turan Sanomat newspaper at Åbo show that the vitality of Finnish architecture is not confined to the capital. The preface by Hilding Ekelund and all captions to the illustrations are printed in Finnish, Swedish and English, the last being a particularly graceful compliment to this country which English architects will be quick to appreciate. Unfortunately, Finland in company with the other new Republics of the Eastern Baltic has renamed nearly all her principal towns: thus Helsingfors becomes Helsinki, Åbo is Turku, and even Finland is now Suomi, but the book is furnished with an excellent index which gives all variants.

CHARLTON HOUSE, KENT.

CHARLTON HOUSE, KENT. *An historical and architectural guide. By A. R. Martin, F.S.A. Pam. Lond.: Blackheath Press. 1929.*

This account of a somewhat little-known monument in the London area is the kind of historical guide, both topographical and architectural, which one wishes could be produced for every ancient building. An account of the manor and occupants is followed by that of the site (illustrated by Rocque's map), and the building is then carefully described. Heraldry is described in fifteenth-century phraseology used when still a living art. The popular attribution to Inigo Jones is disclaimed, and the character of the work is cited in favour of John Thorpe as architect, though additions were made in the mid-seventeenth and nineteenth centuries. Reference is made to *Country Life*, 1909, and the house is illustrated also in Latham's *English Homes: Early Renaissance*, H. Avray Tipping's *English Homes: period iii, Late Tudor*, vol. i, and the Royal Commission on Historical Monuments' *East London* (which also illustrates the curious contemporary church at Charlton), but these do not give the excellent plans in this guide. Library and offices already occupied the house, which it is suggested should be used also as a Museum—a wish that has recently been fulfilled.

H. V. M. R.

ACCESSIONS TO THE LIBRARY

1932–1933—III—*continued*

BUILDING

Sanitary Science and Equipment

Clay (Henry H.)
Sanitary accommodation, appliances and fittings for hotels and flats, *etc.* The Henry Saxon Snell prize essay, 1927. The Royal Sanitary Institute. pam. 10″. London. 1928. 1s. R.

Scott (Walter)
The one-pipe system of house drainage. [*Reprint from* The Plumber and Journal of Heating, Nov. 1931.] pam. 8¼″. London. 1931. R.

Thomson (Gilbert)
The single pipe system of house drainage.
pam. 8¼″. Glasgow. (1926.) R.

New York. *State.* Department of Health
State of New York, 1929, standard plumbing code.
pam. 9″. Albany. 1929. R. (2).

Department of Scientific and Industrial Research: Illumination Research
Technical paper No. 7. Penetration of daylight and sunlight into buildings.
2nd ed. pam. 9½″. London: H.M.S.O. 1932. 9d. R.

Fire Protection

Holt (Harold G.)
*Fire protection in buildings: a practical treatise for engineers, architects, surveyors and property owners.
9″. xx+260 pp. London: Crosby Lockwood. 1913.
Presented by Mr. Frederick Chatterton [*F.*].

SURVEYING

Usill (G. W.)
Practical surveying . . . Revised by Colonel Sir Gordon Hearn.
14th ed. 9½″. xii+379 pp. London: Crosby Lockwood. 1932. 8s. 6d. P.

TOPOGRAPHY

Rostovtzeff (Michael I.)
Out of the past of Greece and Rome.
9″. xvii+129 pp. New Haven: Yale U.P. *and* London: Milford. 1932. 12s. P.

Ivimey (Alan)
A history of London.
8¾″. x+253 pp. and 16 pls. London: S. Low, Marston and Co. [1932.] 12s. 6d. P.

REGIONAL AND TOWN PLANNING

Freese (Stanley)
The ten-year plan, a dream of 1940.
7″. lx+235 pp. London: C. Palmer. 1932. 6s. R.

Garden Cities and Town-Planning Association
Leaflet No. 13. The preparation of planning schemes under the Town and Country Planning Act, 1932. By Alfred T. Pike.
pam. 9½″. London. (1932.) 1s. R.

Jennings (W. Ivor)
The law relating to town and country planning.
9¾″. xxiv+240 pp. London: C. Knight. 1932. 12s. 6d. P.

Howkins (F.)
*An introduction to the development of private building estates and town planning.
8¼″. xv+368 pp. and 2 folding diagrams. London: Estates Gazette. (1926.) 15s. P. (2).

Leicestershire Regional Town Planning Joint Advisory Committee
Regional planning report; prepared for . . . the committee by Allen and Potter.
9¾″. 106 pp. and pls. and folding maps. Leicester: Thornley & Son. 1932. 7s. 6d. R.

Hamburgisch-Preussischen Landesplanungsausschusses
Darstellungen des Soziologischen Zustandes im Hamburgisch-Preussischen Landesplanungsgebiet. Von F. Schumacher.
9¾″. 24 pp. *and* 105 pls. Hamburg: Lütcke & Wulff. 1931.
Presented by Professor Fritz Schumacher [*Hon. Corr. Mem.*].

Hamburgisch-Preussischen Landesplanungsausschusses
Wesen und Organisation der Landesplanung im Hamburgisch-Preussischen Planungsgebiet. Von F. Schumacher.
9¾″. 40 pp. *and* 60 pls. Hamburg: Boysen & Maasch. 1932.
Presented by Professor Fritz Schumacher [*Hon. Corr. Mem.*].

Schumacher (Fritz) *and* Arntz (Wilhelm)
Köln. Entwicklungsfragen einer Groszstadt.
Q. 11″. 321 pp. Munich: G. D. W. Callwey. 1923.
Presented by Professor Fritz Schumacher [*Hon. Corr. Mem.*].

Schumacher (Fritz)
Ein Volkspark Dargestellt am Hamburger Stadtpark.
Q. 11¾″. 134 pp. Munich: G. D. W. Callwey. 1928.
Presented by the author.

Adams (Thomas).
Limiting the size of buildings; their height and density considered in relation to the horizontal movement of traffic. (*Reprint from* Civil Engineering *for October, 1932.*) Q. pam. 12″. London. 1932.
Presented by the author.

Typescripts

Dower (J. G.)
Bibliography for the design, construction, etc., of aerodromes.
Typescript. January 1933.

Dower (John)
The requirements for civil aerodrome design. (Extract from the Air Annual of the British Empire 1932–33.)
Typescript. *Presented by the author*

Correspondence

"THE GREAT BAROQUE MASQUERADE"

Eliot House,
Harvard University,
Cambridge, Mass.
30 January 1933.

To the Editor, JOURNAL R.I.B.A.,—

DEAR SIR,—In his excellent article in the JOURNAL of 14 January Mr. Holford points out that *the Baroque was not architecture.* He says that it looked all right outside, and adds that like the stage-property coach it often looked very well inside. When one further considers that it functioned admirably, and that after two hundred years much of it is still standing, one must admit that, if not architecture, *it was very like architecture.*—Yours faithfully,

DENIS WINSTON [*A.*].

"THE USE OF GLASS IN BUILDING"

Clutha House, Princes Street,
Westminster, S.W.1.
20 February 1933.

To the Editor, JOURNAL R.I.B.A.,—

DEAR SIR,—On page 276 of your issue of 11 February, as a tail-piece to the article which I contributed appears a photograph of a design in gravé glass.

This design was attributed to Mr. Raymond McGrath, and I have since heard from him that he had not, in fact, anything to do with it. May I, through your columns, express to Mr. McGrath my regrets at the mistake which has occurred, and for any inconvenience which this may have caused.—Yours faithfully,

M. L. ANDERSON.

Obituary

PERCY B. TUBBS [*F.*]

The death of Mr. Percy Tubbs, senior partner of Percy Tubbs, Son & Duncan, at the age of sixty-four, means a loss to the profession not only of a successful architect, but of a man who applied his exceptional powers of initiative and organisation to many outside interests.

Mr. Tubbs was educated at Highgate School and in Paris, and from the year 1894 he practised in London. Amongst the works for which he was responsible are premises for Barclays and Lloyds Banks at Barbican, Sloane Square, South Croydon, North Harrow and Earl's Court; office buildings, including Canada House, Little Britain; Demerara House, St. Dunstan's Hill; Godliman House, St. Paul's; Shanghai House, Botolph Lane; the Caslon Foundry, Chiswell Street; and London offices for the *Glasgow Herald*, Fleet Street. The Littlestone Convalescent Home, St. Mary's Schools, Finchley, the Chelsea Housing Scheme (flats), and War Memorials at Cam, Charfield Kingswood, and Wotton-under-Edge were also by him.

One of Mr. Tubbs's most important services to the profession generally was the part he took in the founding of the first Atelier of Architecture, a scheme which was put forward in the first year of his Presidency of the Society of Architects. The First Atelier of Architecture in London was established under the control of the Beaux Arts Committee, for the purpose of promoting improved methods of architectural training in Great Britain, and Mr. Tubbs remained an active member of the Committee of Management during the whole period of the Atelier's existence. He was also largely responsible for the expansion of the Society of Architects, of which he was Vice-President from 1908-1911, and President from 1912-1913, and he was awarded the Gold Medal of the Society for services rendered. He was one of the Society's honorary examiners and a regular and hard-working member in Committees and elsewhere at promoting the interests of the Society. He also took a very active part in the preliminary work which ultimately led to the establishment of the Royal Commission of Fine Arts.

During the war, in which two of his sons served, one being killed, Mr. Tubbs initiated and organised a service which supervised the welfare of colonial and provincial soldiers on leave, a scheme which eventually became a unit of the City of London National Guard in which he himself served. He was actively interested in other charitable organisations, and in particular his invaluable services for the Professional Classes War Relief Council (afterwards the Professional Classes Aid Council) must be mentioned.

Mr. Tubbs was elected a fellow of the R.I.B.A. in 1904. He was a Fellow of the Institute of Arbitrators, and a member of the Art Worker's Guild, the A.A., and the Arts, Savage and Chelsea Arts Clubs, of which latter he had been Chairman and Treasurer. He was also a Freemason. He was a keen photographer, having made early experiments in colour, and he had a large collection of etchings and prints. He was also a good all-round sportsman, being a good golfer and an excellent shot, and in all his activities, professional or personal, he made many friends.

Mr. Percy Tubbs lived to see the schemes in which he took so active a part brought to a successful conclusion, and he will always be remembered by his friends and colleagues as a man who had the courage of his convictions and did good and lasting work in connection with the institutions and societies with which he was connected.

JOHN ROBERT SUTTON [*F.*].

Mr. Sutton, who died recently in London, was one of the pioneer architects in the city of Buenos Aires, where, at the time of his retirement in 1907, he had built and designed about a hundred buildings.

Mr. Sutton was born in King's Lynn, Norfolk, in 1863. He took up architecture and realising the scope offered by the growth of a new city where every encouragement was given to a man with ideas and ability, he went to the Argentine when still a very young man, and soon became recognised as one of the leading architects of Buenos Aires. This city was then a town without drainage, with scarcely a decent street, planned without form or design, but the Argentine Government, with almost unlimited wealth at its disposal, had ambitions of making it one of the finest cities of the world. The city is now known as the "Paris of the South," and owes a great deal to the work of John Sutton, who designed many of its early buildings, including the Royal Sun and Northern Insurance Buildings. He was responsible also for much of the survey and drainage work of the city, and much of the early construction necessary for the

maintenance of a well-ordered city was carried out under his supervision. In the province of Rosario he designed and built the great "Las Palmas" Refrigerating Factories for the Nelson Company. Mr. Sutton was well known in Buenos Aires not only for his architectural work but for his hospitality and interest in all the social activities of the city, and his compulsory retirement in 1907 through ill-health was a great loss to Buenos Aires.

Mr. Sutton was elected a Fellow of the Institute in 1907.

P. W. BARNETT

We have received the following tribute to the late Mr. P. W. Barnett from Mr. S. Pointon Taylor, writing on behalf of the R.I.B.A. Science Standing Committee.

The members of the Science Standing Committee of the Royal Institute of British Architects are lamenting the death of their distinguished colleague, Percy William Barnett.

The Institute, the architectural and scientific professions generally, but we in particular, are great losers by this totally unexpected buffet of fate.

Mr. Barnett had been recognised by us for years as more than a useful member of the Committee. He was an authority and an intrepid explorer in the vast uncharted field of building science.

We respected him for his wide knowledge of architectural and scientific values; for his great vision and fine scruples; for the lucidity of his exposition and for his generous efforts in the eternal search for truth to appreciate other points of view than his own.

His peculiar combination of qualities is probably irreplaceable.

He was indeed a "Good Companion."

S. Pointon Taylor,
Hon. Sec., Science Standing Committee.

Notes

PRESIDENT'S ENGAGEMENTS

The President attended the Annual Dinner of the Institute of Builders on 23 February, and that of the Town Planning Institute on 24 February. In March he will be attending the Annual Dinner of the Institution of Civil Engineers on the 1st, and that of the South Wales Institute on the 24th.

VICE-PRESIDENTS' ENGAGEMENTS

Mr. E. C. Bewlay attended the Annual Dinner of the Hants and Isle of Wight Architectural Association on 14 February 1933.

Mr. L. S. Sullivan attended the Annual Dinner of the National Federation of Iron and Steel Manufacturers on 23 February 1933.

Mr. Sydney Tatchell will be attending the Annual Dinner of the Institution of Structural Engineers on 17 March.

SIR CHARLES PEERS [*F.*]

Sir Charles Reed Peers, who will be presented with the Royal Gold Medal at the R.I.B.A. on 3 April, has been elected a Trustee of the British Museum in the place of the late Viscount Dillon, C.H.

MR. T. OVERBURY, F.S.A. [*F.*]

Mr. T. Overbury, F.R.I.B.A., of Cheltenham, has been elected a Fellow of the Society of Antiquaries.

DEFINITIONS OF TERMS IN THE METROPOLITAN WATER BOARD ACT 1932

The Metropolitan Water Board Act 1932 applying to the area supplied by the Metropolitan Water Board, which comprises the whole of the County of London and parts of the counties of Surrey, Kent, Essex, Hertford, and Middlesex, comes into force on 1 April 1933, and it will be useful for householders to know the following definitions:—

Service pipe.—The pipe from the Board's main to the house cistern.

Communication pipe.—That portion of the service pipe which extends from the Board's main to the stop cock outside the consumer's premises. If there is no stop cock from the Board's main to the wall of the consumer's premises under the Act these pipes are to be transferred to the Board's, who will henceforward be responsible for their maintenance and repair.

Under Clause 12 the Board may make bye-laws for the purpose of requiring the testing and stamping of taps, cocks, ferrules, valves, flushing cisterns, fittings, or apparatus to be fixed at any time after the coming into force of such bye-laws and prescribe a reasonable charge therefor.

At the present time there are two markings for the testing of water fittings, one of which is the marking of the British Waterworks Association J.C.S.W.R., and it is an indication that the fitting is in accordance with the specification laid down by the British Waterworks Association. There is another marking which is known as the "Swan" marking, which is the marking which indicates that the particular fittings are in accordance with the specification of the Minister of Health. These are the two markings and a manufacturer to-day is licensed by the British Waterworks Association to put on these markings, and he holds that licence subject to its being withdrawn in the event of the fittings which he turns out being so below the specification that it is unfitted to perform the function for which it was constructed.

Clause 12 will enable the Board to take and accept as standards of specification either the J.C.S.W.R. marking of the British Waterworks Association, which is the more complete standard specification, or the "Swan" or to make bye-laws with modification of the existing specifications to suit their area and require all fittings to be sent to their testing stations to be tested and stamped with their marking before being allowed to be fixed.

H. D. Searles Wood.

PUBLIC LECTURES ON CHURCH ARCHITECTURE ST. PAUL'S ECCLESIOLOGICAL SOCIETY

The first of three public lectures on the "Story of England as recorded in its old Churches," organised by the St. Paul's Ecclesiological Society, was delivered by Mr. F. Herbert Mansford [*F.*] in the R.I.B.A. Galleries on Wednesday, 8 February, before a large and varied audience. Mr. G. J. B. Fox presided. Beginning with the origins of the parish church in the manorial system, Mr. Mansford described the growth of

the plan through the Anglo-Saxon and Norman periods and contrasted the architectural features and sculptural technique of these styles. The lecture was delivered informally and freely illustrated with excellent lantern slides, and questions were afterwards answered. Mr. A. E. Henderson [*F.*] expressed the thanks of the audience to the lecturer. The remaining lectures are fixed for Wednesdays, 8 March and 5 April (at 8 p.m., at 9 Conduit Street as before), and will deal with the remainder of the mediæval period. Visitors are cordially invited to these and all other meetings of the Society.

Arising out of the reference, in the last notice of the Society, to Mr. Beresford Hope as President of both it and the R.I.B.A., it should be explained that eight members served in both offices, but Beresford Hope's tenure was simultaneous.

GLASS IN MODERN BUILDING

Errata

We wish to draw attention to the following Errata which occurred in the article published in the last JOURNAL on "Glass in Modern Building":—

Page 257, col. 1, line 23, light transmission *should read* "60 per cent." *instead of* "70 per cent."

Page 257, col. 1, 4 lines from bottom, Fig. 21, *should read* "Fig. 19," and the figure 19 *should be inverted*.

Page 263, col. 2, line 10, "10 lb. per square inch" *should read* "10,000 lb. per square inch," and in line 19, "50 lb. per square inch," *should read* "50,000."

DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH

An Architect Assistant Wanted

An assistant is required at the Building Station, Garston, near Watford. Candidates should be professionally qualified as architects and in addition possess some scientific training. A university degree or equivalent qualification in engineering, physics or chemistry would be a strong recommendation. Initial salary, which will depend upon qualifications of candidate, will be of the order of £400 per annum inclusive.

Application should be made not later than Tuesday, 28 February, on a form to be obtained from the Secretary, Department of Scientific and Industrial Research, 16 Old Queen Street, Westminster, S.W.1.

THE WREN SOCIETY

In a recent number of the *Zeitschrift für Kunstgeschichte* there appeared a discerning article by Albert Dresdner on the Wren Society and its activities, in particular its publications, which are described and reviewed. The author of the article writes with appreciation about the invaluable work the Society is doing for the better knowledge and understanding of Wren himself and for the history of English architecture in general. That people in other countries should take such a keen interest in the activities of this Society is a delightful tribute to the importance of its work.

EXHIBITION OF DRAWINGS OF CEMENT HOUSE COMPETITION

The Cement Marketing Co., Ltd., have arranged a display of 81 of the 825 sets of drawings entered for their Competition for designs of houses to promote the artistic use of cement, to be held at the Building Centre, 158 New Bond Street, from Monday, 20 February, to Monday, 6 March inclusive.

Scale models will be on view and also sample slabs of the materials specified by the winning competitors.

ARCHITECTS' UNEMPLOYMENT RELIEF FUND.

The Architects' Unemployment Committee have very great pleasure in reporting a donation of One Hundred Guineas received from Sir Giles Gilbert Scott, R.A., in aid of the Architects' Unemployment Relief Fund.

Other donations which we have received are:—

	£	s.	d.
Mr. John Denman	10	10	0
The Gloucestershire Architectural Association (second donation)	5	0	0
Mr. Sidney C. Clark	1	1	0
Mr. William Fenn (second donation)	1	1	0
Major F. Candelent Wilson	1	1	0
Mr. E. W. Roberts	10	6	

Further subscriptions which have been renewed for the year include contributions from:—

Sir Raymond Unwin, the President of the Institute:
Mr. P. B. Mauger. Mr. S. Tennant.

Messrs. Ashley and Newman:
Mr. G. Vey. Mr. R. J. Truelove.
Mr. H. H. Bull. Mr. A. J. Tolhurst.
Mr. W. Howard. Mr. W. J. Smith.

Messrs. Elcock and Sutcliffe:
Mr. E. H. Allsford. Mr. A. S. Gasson.
Mr. E. V. N. Strother. Mr. J. M. Metcalfe.
Mr. J. L. Harvey. Mr. G. D. Griffiths.
Mr. R. M. Smith. Mr. J. Foster.
Mr. A. M. G. Rees.

The London Society:
Mr. Percy Lovell.

Mr. H. E. Robertson.

The Architectural Staff of the Shanghai Municipal Council:
Mr. C. H. Stableford. Mr. R. D. Fraser.
Mr. J. D. Watt.

The Architectural Staff of the Office of Works.

New subscriber:
Mr. Geoffrey S. Buckingham.

Cheques should be made payable to the Architects' Unemployment Committee and sent to The Secretary, Architects' Unemployment Committee, 9 Conduit Street, London, W.1.

INTERNATIONAL CONGRESS OF ARCHITECTS, WASHINGTON

The International Congress of Architects which was to have been held in September this year in the United States of America, at Washington, has been deferred until improved conditions make it possible to ensure an adequate gathering of international representatives.

A further announcement will be made as soon as the Comité Permanent International des Architectes is able to arrange a suitable date.

THE R.I.B.A. MEMBERSHIP PAMPHLET

The 1933 edition of the R.I.B.A. Pamphlet, "Membership of the R.I.B.A.," has now been published. Copies may be obtained from the Secretary R.I.B.A., price 1s. each, exclusive of postage.

The pamphlet, in addition to containing information regarding the Examinations and Membership of the R.I.B.A., contains full particulars with regard to architectural training, scholarships available at the Schools of Architecture recognised for exemption from the R.I.B.A. Examinations, a selected list of books on architectural subjects, etc. Maps, showing the local distribution of facilities available for architectural education in the British Empire, are an important feature of the pamphlet. These maps are accompanied by lists of schools throughout the countries and by a schedule showing the local distribution of facilities. This schedule gives the R.I.B.A. Allied Societies and their provinces and states the educational facilities available in the area of each Allied Society.

Allied Societies

THE LEICESTER AND LEICESTERSHIRE SOCIETY OF ARCHITECTS

The annual dinner of this Society was held on 27 January at the Leicestershire Club.

Sir Raymond Unwin was the principal guest at the dinner, which was presided over by Mr. George Nott, F.R.I.B.A., President of the Society.

Amongst other guests present were the Lord Mayor of Leicester, Mr. E. C. Bewlay, Major T. C. Howitt, Mr. J. B. Surman, and Mr. Ian MacAlister.

Mr. George Nott, proposing the toast of "The R.I.B.A. and Allied Societies," referred to the development of the Institute and its forty-nine Allied Societies, and said that if one were to imagine an Architectural Societies' Empire Broadcast at a general meeting at Conduit Street, participated in by the presidents of the Overseas Societies, one would probably be profoundly impressed by the scope of the gigantic organisation initiated by the R.I.B.A.

Mr. Nott, in welcoming Sir Raymond Unwin, described him as a super-expert in town-planning, and said that he was probably better known in Germany, Czechoslovakia and Russia than in the English Provinces.

In response, Sir Raymond referred to the new Town and Country Planning Bill, which, he affirmed, would give better scope for the planning and replanning of country towns, and the carrying out of slum clearance schemes with less clumsy and patchy methods than had to be adopted under the old Act.

He referred to the effects of pettifogging economy but said that economists were gradually coming to realise that probably the best method of bringing about a general industrial revival was to revive the building industry.

Mr. E. C. Bewlay also replied to the toast. Mr. Walter Brand proposed "The Guests," to which Mr. J. B. Surman responded.

THE LIVERPOOL ARCHITECTURAL SOCIETY

On 4 January, at a meeting of the Society, Mr. E. R. F. Cole [*F.*] showed slides of Greek and Roman temples, palaces and theatres, giving a historical and descriptive sketch of each, and endeavouring to show the vast and splendid conceptions behind the architectural productions of those days, and the influence of Greek architecture upon the Romans.

On 18 January Mr. H. J. Rowse [*F.*] conducted a tour of the Society round the Martins Bank New Headquarters, for which he was the architect. After the Society had been entertained to tea in the Board Room, Mr. Rowse read a paper on the new building. He gave a description of the whole project in its various stages, dealing with the particular requirements of accommodation, the limitations in connection with the site and the consideration of the project in relation to its immediate environs. At the conclusion of his talk he showed a number of very interesting slides illustrating the various stages in the development of the scheme, including a number of slides of detailed constructional work and interior fittings.

At a meeting of the Society on 15 February Mr. R. J. Gardner-Medwin read a paper on "Civic Sense in Sweden," illustrating his lecture with lantern slides.

Mr. Gardner-Medwin dealt with Swedish architecture from the town planner's view, and said that the Scandinavian races seem to have a natural instinct for planning. Comparing the general standard of architecture in Sweden with that of England, he said that we had as large a supply of genius in England as in Sweden, and as fine and finer individual buildings, but that as a nation Sweden had good taste and we had not. He attributed this partly to the fact that Sweden has not suffered from the effects of industrialism to the extent we have, and has therefore no excuse for cramped planning; and that for centuries she has had no wars. Mr. Gardner-Medwin went on to discuss the romantic spirit in Swedish architecture, which, unlike the degenerate quality of our English Victorian romanticism, is a powerful and progressive thing. He concluded with a plea for greater enthusiasm in England for architecture and planning, and for more general architectural education.

THE SOUTH WALES INSTITUTE OF ARCHITECTS

Under the auspices of the South Wales Institute of Architects (Central Branch) and the Institute of Builders (South Wales Branch) a lantern lecture on "Gardens" was given in the Lecture Theatre of the Engineers' Institute, Park Place, Cardiff, on Thursday, 2 February, 1933, by Mr. G. A. Jellicoe [*A.*], when Mr. Percy Thomas, O.B.E. [*F.*], presided over a large audience.

After expressing his appreciation of the invitation to talk on "Gardens" at Cardiff, the lecturer said that undoubtedly the subject was receiving more and more attention. The amenities of garden design in relation to town planning gave it especial value. The civic centre at Cardiff with its tree planting and general layout suggested how the authorities were realising the value to the community of not only well laid out parks and gardens, but of refreshing surroundings in the very heart of the city. The modern tendency in park design was to develop along thoroughfares, and in England this represented a complete change in ideas.

The lecturer then considered garden psychology contrasting the Greek, Renaissance and French outlook. Slides were shown of Continental gardens, and English garden design, the domestic character of which was the result of social structure and climate, was compared with Continental garden design. Mr. Jellicoe then spoke of the gardens of the future which, he said, would more nearly express our characteristics than those of the immediate past. Gardens were an expression of current civilisation and their future, therefore, had remarkable possibilities.

On the proposal of Mr. W. S. Purchon [*A.*], Head of the Welsh School of Architecture, seconded by Mr. J. E. Turner, J.P., a hearty vote of thanks was accorded to the lecturer with acclamation.

Notices

MEMBERS' DANCE
MONDAY 6 MARCH 1933

A Dance has been arranged by the Social Committee to take place in the R.I.B.A. Galleries on Monday 6 March, commencing at 9 p.m. Tickets price 6s. each, inclusive of light refreshments, can be obtained on application to the Secretary R.I.B.A., 9 Conduit Street, W.1.

POPULAR LECTURES

The Art Standing Committee has arranged a series of six popular lectures, illustrated by lantern slides, on "How to Look at London," to take place in the R.I.B.A. Meeting Room on Wednesdays during March and April. The Lectures will commence at 6 p.m. and will last about one hour. Admission will be free.

The following is a list of the lectures:—

March 8th.—"Piccadilly." Mr. H. S. Goodhart-Rendel [*F.*].

March 15th.—"Where Londoners Live." Mr. A. S. G. Butler [*F.*].

March 22nd.—"Where Londoners Work." Mr. T. A. Darcy Braddell [*F.*].

March 29th.—"Where Londoners Play." Mr. Morton Shand.

April 5th.—"Where Londoners Shop." Mr. F. E. Towndrow [*A.*].

April 12th.—"What London Might Be." Mr. A. B. Knapp-Fisher [*F.*].

THE SEVENTH GENERAL MEETING

The Seventh General Meeting of the Session 1932–33 will be held on Monday, 20 March 1933, at 8 p.m., for the following purposes:—

To read the Minutes of the Sixth General Meeting held on Monday, 20 February 1933; formally to admit members and students attending for the first time since their election.

To read the following Paper: "Recent Developments in Building," by Mr. Oscar Faber, O.B.E., D.Sc. [*Hon. A.*].

THE ARCHITECTS' CONFERENCE, CAMBRIDGE
21–24 June 1933

The Annual Conference of the Royal Institute of British Architects and its Allied and Associated Societies will take place at Cambridge from 21 to 24 June 1933. The Cambridge Chapter of the Essex, Cambridge and Hertfordshire Society of Architects have in hand the preparation of a most attractive programme, and particulars will be issued in due course.

All members and students of the R.I.B.A. and all members of the Allied Societies, the Architectural Association, and the Association of Architects, Surveyors and Technical Assistants, are cordially invited to attend the Conference.

EXHIBITION OF BLACK AND WHITE AND COLOUR WORK BY MEMBERS OF THE R.I.B.A.

In October 1928 an Exhibition of Black and White and Colour Work by members of the R.I.B.A. was arranged at the Institute Galleries and in view of its outstanding success the Art Standing Committee have decided to arrange a similar Exhibition to be held from 5 to 22 May 1933.

All works sent in for exhibition will be submitted to the judgment of the Selection and Hanging Committee, whose decision will be final. Exhibitors will be required to pay the cost of carriage and insurance during transit and to make arrangements for the collection of their works at the close of the Exhibition.

In order that the Committee may be in a position to formulate some idea of the amount of work available, members who are willing to submit black and white drawings, original etchings or engravings, and drawings in any medium for consideration by the Committee are requested to write to the Secretary R.I.B.A. not later than the 18 March 1933, giving the following particulars:—

(i) Sizes.
(ii) Subjects (these need not necessarily be architectural).
(iii) Names of artists.
(iv) Nature of medium in which drawings are rendered.
(v) Whether the works are framed and glazed (all drawings *must* be mounted).
(vi) Approximate value of each work.
(vii) Whether the exhibits are for sale or not. In this connection it is proposed that not less than 25 per cent. of the proceeds resulting from the sale of any work in the exhibition should be given to the Architects' Unemployment Relief Fund.

Note.—Drawings by deceased members may be submitted if they are for sale.

It is particularly requested that members should not submit the drawings until notice is sent to them.

Ian MacAlister,
Secretary R.I.B.A.

SUSPENSION OF MEMBERSHIP

By a resolution of the Council under the provisions of Bye-law 24, the following Licentiate has been suspended from membership for a period of twelve months:—

Denis J. Tierney, of Cork.

Competitions

ANTWERP: TOWN PLANNING COMPETITION

The Council of La Société Intercommunale de la rive gauche de l'Escaut invite proposals for a scheme for the replanning of the area situated on the bank of the river opposite Antwerp.

Proposals submitted will be examined by a Jury consisting of:
Dr. H. P. Berlage, The Hague.
Mons. H. Prost, Paris.
Mons. le Baron Horta, Brussels.
Mons. Henry Van de Velde, Brussels.
Mons. P. De Heem, Antwerp.
Mons. G. De Ridder, Antwerp.
Mons. J. de Bruey, Antwerp.

Premiums: 100,000 francs, two of 50,000 francs and four of 25,000 francs.

Last day for sending in proposals: 31 May 1933.

The programme and necessary plans relating to the competition may be obtained on application to the offices of the Society, 26 Rue Arenburg, Antwerp. Deposits, 20 francs for the programme and 80 francs for the plans.

MANCHESTER: EXHIBITION HALL

Provincial Exhibitions, Ltd., the organisers of the Manchester Building Trades Exhibition, invite architects who are British subjects, to submit, in competition, designs for a new Exhibition Hall for Manchester.

Assessors: Mr. H. S. Fairhurst [*F.*].
Mr. A. J. Hope [*F.*].
Mr. J. Hubert Worthington, O.B.E. [*F.*].

Premiums: £150, £75 and £25.

Last day for receiving designs: 13 April 1933.

Conditions of the competition may be obtained on application to the Competition Manager, City Hall, Deansgate, Manchester.

(Conditions have not yet been considered by the Competitions Committee.)

STOCKHOLM: TOWN PLANNING COMPETITION

The City of Stockholm, through its town planning board, invites proposals for a town planning scheme to cover the area designated Lower Norrmalm, which occupies a central position in the city. The object of the competition is to secure preliminary proposals for a solution of the town planning problem, which would enable a gradual reconstruction of this district to be carried out, with due regard to the present requirements as to the capacity of the streets and the supply of light and air for the blocks of houses.

Proposals submitted will be examined by a committee consisting of the following:—

Harry Sandberg, Civic Councillor, Stockholm (Chairman).
Dr. Yngue Larsson, Civic Councillor, Stockholm (Vice-Chairman).
Gustaf Ahlbin, Stockholm.
E. G. Asplund, Stockholm.
Carl Bergsten, Stockholm.
Hermann Jansen, Berlin.
Albert Lilienberg, Director of Town Planning, Stockholm.
Professor Ragnar Ostberg (Hon. Corresponding Member R.I.B.A.), Stockholm.
George L. Pepler, London.

Premiums: 20,000 Kr. (approx. £1,000)
15,000 Kr. (approx. £750)
10,000 Kr. (approx. £500)
and further amounts to bring the total prize money up to 60,000 Kr.

Last day for sending in proposals: 1 March 1933.

FACADE IN GRANITE

The Architectural Association, at the request of the Cornish Quarry Masters' Association, invite architects to submit in open competition designs for a façade of a building in granite.

Assessors: Mr. A. B. Knapp-Fisher [*F.*].
Mr. Howard Robertson [*F.*].
Mr. G. Grey Wornum [*F.*].
and two representatives of the Cornish Quarry Masters' Association.

Premium: £50.

Last day for sending in designs: 24 March 1933.

Full particulars of the competition are available on application to the Secretary, Architectural Association, 34–36, Bedford Square, W.C.1.

WORKING CLASS COTTAGE COMPETITION

The Building Centre, Ltd., invite architects to submit, in open competition, designs for working class cottages which may be built at a minimum cost and so let at an economic rent. The design of a standard cottage is supplied, the cost of which has already been carefully estimated, and competitors are asked to submit plans for improving this design.

Assessors: Mr. Maurice E. Webb, D.S.O., M.C. [*F.*].
Mr. Robert Atkinson [*F.*].
Mr. L. H. Bucknell [*F.*]
Mr. Louis de Soissons, O.B.E. [*F.*].
Mr. Sidney Gluckstein, F.I.O.B.
Mr. Vincent Gluckstein, F.I.O.B.
Mr. G. Grey Wornum [*F.*]
Mr. F. R. Yerbury [*Hon. A.*].

Premium: £100.

Last day for receiving designs: 31 March 1933.

Conditions of the competition may be obtained on application to the Secretary, The Building Centre, 158 New Bond Street, W.1. Price 1s., post free.

SWANSEA: PROPOSED NEW SCHOOL-CHURCH AT TOWNHILL

Members of the Royal Institute of British Architects and of its Allied Societies must not take part in the above competition because the conditions are not in accordance with the published Regulations of the Royal Institute for Architectural Competitions.

Members' Column

NEW PRACTICE

F. J. Massey Ormrod [*A.*] and Harry Banister [*A.*] have started in practice together at 20 Bluecoat Chambers, School Lane, Liverpool. They will be pleased to receive trade catalogues.

CHANGE OF ADDRESS

Mr. Thomas S. Cordiner [*A.*] has transferred his office from 26 Midlothian Drive, Glasgow, S.1, to Blythswood Chambers, 261 West George Street, C.2. Telephone: Central 8854.

C. E. Millington [*A.*] has changed his address to 141 Croxted Road, Dulwich, S.E.21.

UNFURNISHED ROOM WANTED

Wanted by Fellow, unfurnished room in architect's office. Easy stair or lift essential. Convenient for Victoria Station.—Box 1423, c/o Secretary R.I.B.A.

ACCOMMODATION TO LET.

Member offers small, self-contained, furnished office near Charing Cross Station. Rent, inclusive of rates, light and heating, £4 a month.—Box No. 7233, c/o Secretary R.I.B.A.

The Architectural Association has four large rooms to let in Bedford Square. For further particulars apply to the Administrative Secretary, 36 Bedford Square, W.C.1.

PARTNERSHIP WANTED

Associate (40), prizeman in design University College Evening School, with over 20 years' experience in London and provinces of all types of work, desires to enter into correspondence with an established firm with a view to a partnership. Replies will be treated in confidence.—Box 9233, c/o Secretary, R.I.B.A.

Wanted to purchase, Architect and Surveyor's established practice, Partnership or Succession.—Apply Box No. 1323, c/o Secretary R.I.B.A.

L.R.I.B.A. (32), fully experienced as Senior Assistant and Junior Partner, would like to correspond with Architect in practice with a view to Partnership. Energetic; personality; ambitious. Complete knowledge of all branches of general practice, town and rural. Any district in this country or abroad if prospects good.—Box No. 3113, c/o Secretary R.I.B.A.

PARTNERSHIP DISSOLVED

The partnership that has existed between Mr. Mitchell C. Kay [*A.*] and Mr. L. Gordon Lunan [*A.*], under the style of Kay & Lunan has been dissolved by mutual consent. Mr. Kay will continue in practice at 15 Wood Street, Wakefield.

NEW OFFICE

Mr. Waldo Maitland, A.R.I.B.A., architectural adviser to the E.L.M.A. Lighting Service Bureau, has set up under the style of Waldo Maitland and Partners, at 32 Bloomsbury Street, W.C.1 (Telephone: Museum 0355). He is undertaking consulting and other work in connection with modern electric lighting schemes for private and public buildings of all types. Mr. Maitland will continue to advise the Lighting Service Bureau on all architectural matters.

Mr. A. B. Whittingham, M.A. [*A.*], has been appointed Surveyor to the Dean and Chapter of Norwich and also Diocesan Surveyor. He has opened an office at the Cathedral Close, Norwich (Telephone 928), in addition to his present office at 10 Tower Street, Ipswich (Telephone: Ipswich 2989).

Minutes VIII

SESSION 1932–1933

At the sixth General Meeting of the Session, 1932-1933, held on Monday, 20 February, 1933, at 8 p.m.

Sir Raymond Unwin, President, in the Chair.

The attendance book was signed by 47 Fellows (including 7 members of Council), 38 Associates (including 1 Member of Council), 17 Licentiates, 1 Retired Fellow, and a large number of visitors.

The Minutes of the Fifth General Meeting held on 23 January having been published in the JOURNAL, were taken as read, confirmed, and signed as correct.

The Hon. Secretary announced the decease of:—

Hamilton Neil, elected Licentiate 1911, Fellow 1921.

Edward Penfold, elected Associate 1895, Fellow 1927.

Percy Burnell Tubbs, elected Fellow 1904. Mr. Tubbs was a Past-President of the late Society of Architects.

Richard John Williams, elected Licentiate 1911, Fellow 1921. Mr. Williams was a Past President of the Northamptonshire, Bedfordshire and Huntingdonshire Association of Architects and represented that Society on the R.I.B.A. Council for the Session 1929-30.

Percy William Barnett, elected Associate 1921. Mr. Barnett was a member of the Science Standing Committee from 1924 to 1929 and 1931 to 1933, and was Principal Assistant at the Building Research Station, Watford.

William Mackereth Dean, elected Associate 1901.

William Richard Gleave, elected Associate 1893.

Neil Campbell Smith, elected Associate 1905.

George Frederick Ely, elected Associate 1905, transferred to Retired Associateship 1931.

William George Horseman, elected Licentiate 1911.

Arthur William Lewis, elected Licentiate 1931.

John E. Wrathmell, elected Licentiate 1912.

And it was Resolved that the regrets of the Institute for their loss be entered on the Minutes and that a message of sympathy and condolence be conveyed to their relatives.

The following members attending for the first time since their election were formally admitted by the President:—

Mr. R. B. Armistead [*F.*].	Mr. F. E. Kerswill [*A.*].
Mr. S. Chermayeff [*F.*].	Mr. M. F. Nicholas [*A.*].
Mr. A. G. Crimp [*F.*].	Mr. J. H. Liddington [*L.*].
Mr. A. Trystan Edwards [*F.*].	Mr. R. A. Boorman [*S.*].
Mr. C. Kennard [*F.*].	Mr. J. Curtis [*S.*].
Mr. L. Stuart Stanley [*F.*].	Mr. David Gillespie [*S.*].
Mr. B. J. Ashwell [*A.*].	Mr. Arthur C. Gravell [*S.*].
Mr. Robin Boger [*A.*].	Mr. David C. Ireland [*S.*].
Mr. A. P. Ciregna [*A.*].	Mr. Denis Martineau [*S.*].
Mr. R. L. de Wet [*A.*].	Mr. E. Pearce [*S.*].
Mr. J. M. Forsyth [*A.*].	Mr. J. Spedan Stedman [*S.*].
Mr. H. W. Humphrey [*A.*].	(*S.* signifies Student.)

Mr. Thomas Wallis [*F.*] having read a Paper on "Factories," a discussion ensued, and on the motion of Mr. Arthur Wm. Kenyon [*F.*], seconded by Professor C. H. Reilly, O.B.E. [*F.*], a vote of thanks was passed to Mr. Wallis by acclamation, and was briefly responded to.

The proceedings closed at 9.35 p.m.

A.B.S. INSURANCE DEPARTMENT HOUSE PURCHASE SCHEME.

(For property in Great Britain only.)

REVISED TERMS.

The A.B.S. Insurance Department is able, through the services of a leading Assurance Office, to assist an *Architect or his Client* in securing the capital for the purchase of a house on the following terms:—

AMOUNT OF LOAN.

75 per cent.

of the value of the property as certified by the Surveyor employed by the Office.

RATE OF INTEREST.

4 per cent. Clear of Tax.

LEGAL COSTS AND SURVEY FEE,

also the amount of the first quarter's premium on the Endowment Assurance referred to below, are advanced in addition to the normal loan. If the loan is continued for more than fifteen years the *Survey and Legal Costs will be refunded* to the Borrower on repayment of the loan.

REPAYMENT.

By means of an Endowment Assurance which discharges the loan at the end of 15 or 20 years or at the *earlier death* of the Borrower.

SPECIAL CONCESSION TO ARCHITECTS.

In the case of houses in course of erection, it has been arranged that provided the Plan and Specification have been approved by the Surveyor acting for the Office, ONE-HALF of the amount of the loan agreed upon will be advanced on a certificate from the Office's Surveyor that the walls of the house are erected and the roof on and covered in to his satisfaction.

N.B.—Loans will not be undertaken under this scheme upon:

(*a*) Property the value of which is not sufficient to warrant a loan of at least £500 or of which the value exceeds £2,500 ;

(*b*) Property of the bungalow type ;

(*c*) Property not in the sole occupation of the Borrower.

If a quotation is required, kindly send details of your age next birthday, approximate value of house and its exact situation, to the Secretary, A.B.S. Insurance Department, 9 Conduit Street, London W.1. Telephone: Mayfair 0434.

Members sending remittances by postal order for subscriptions or Institute publications are warned of the necessity of complying with Post Office Regulations with regard to this method of payment. Postal orders should be made payable to the Secretary R.I.B.A., and crossed.

It is desired to point out that the opinions of writers of articles and letters which appear in the R.I.B.A. JOURNAL must be taken as the individual opinions of their authors and not as representative expressions of the Institute.

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